DATE **NOTES CONTINUED:** 11. ALL MATERIAL IS TO BE VIRGIN MATERIAL (i.e. NO WELD REPAIRS. (5) SCRIBE, ENGRAVE, OR MECHANICALLY STAMP PLUGS OR RECYCLED MATERIAL). NO REPAIRS SHALL BE MADE UNLESS (NO INKS OR DYES) DRAWING PART NUMBER AND APPROVED IN ADVANCE, AND IN WRITING, BY LIGO LABORATORY. REVISION ON NOTÉD SURFACE FOLLOWED ON THE NEXT LINE BY A THREE DIGIT SERIAL NUMBER, SERIAL NUMBERS START AT 001 FOR THE FIRST ARTICLE AND 12. SURFACE FINISH TO BE AS-PROCESSED FROM MILL/SUPPLIER, FREE FROM PROCEED CONSECUTIVELY. USE .07" HIGH SCRATCHES OR GOUGES. CHARACTERS. **EXAMPLE:** DXXXXXXX-VY, S/N 001 13. PART WILL BE PORCELAIN COATED PER LIGO SPECIFICATION E1000083 VIBRATORY TOOL MAY BE USED. AFTER FABRICATION. THE INDICATED HOLES WILL BE MASKED PRIOR TO PORCELAIN COATING TO APPROXIMATELY 2.5-3X HOLE DIAMETER 6. APPROXIMATE WEIGHT = X.XXX LB. CENTERED ON BOTH SIDES OF THE HOLE. 7. MACHINE ALL SURFACES TO REMOVE OXIDES AND MILL FINISH USE OF ABRASIVE REMOVAL TECHNIQUES IS NOT ALLOWED. 14. DIMENSIONS APPLY BEFORE PORCELAIN COATING UNLESS SPECIFIED **PLAIN PEEK** REFER TO LIGO-E0900364 15. BEND RADIUS: UNLESS OTHERWISE NOTED, THE BEND RADIUS SHOULD BE THE MINIMUM REQUIRED TO FORM WITHOUT CRACKING OR REQUIRING ADDITIONAL 8. ALL PARTS SHALL BE MANUFACTURED IN ACCORDANCE WITH LIGO SPECIFICATION E0900364. WORK WHEN FORMING. IN PARTICULAR IF SHEET METAL IS TO BE PORCELAIN COATED, 40 IN. THE BEND RADIUS SHALL BE A MINIMUM OF .12" OUTSIDE RADIUS OF BEND UNLESS 9. ALL HELI-COIL HOLES TO BE PREPARED ACCORDING TO EMHART HELI-COIL PRODUCT CATALOG, HC2000, REV 4 NOTES 9, 10, 13 and 14 DO NOT APPLY TO THIS PART 10. ALL HELI-COIL INSERTS TO BE INSTALLED BY LIGO PERSONNEL, AFTER DELIVERY OF FINISHED PARTS, USE NITRONIC 60 THREADED INSERTS. **CONNECTOR CONNECTOR CONNECTOR VENT HOLE** 1.600in 40.64mm #1-72 x 0.45" ø 0.125 **FILLISTER HEAD STAINLESS STEEL** #1-72 x 0.45" \emptyset 0.225in | 5.72mm HOLE **MACHINE SCREW FILLISTER HEAD** ø 0.125₁ \emptyset 0.275in 6.99mm **x4 LOCATIONS**\ STAINLESS STEEL **MACHINE SCREW** \oslash 0.315in 8mm **x4 LOCATIONS** 0.375in 9.53mm **GOLD METALIZED OVER PIN 25 ELECTRO-LESS NICKEL PLAIN PEEK** SELECTIVELY METALIZED -PLAIN PEEK 1.600in 40.64mm **PIN 25 VENT HOLE V25A-40 CABLE ASSEMBLY CIRCUIT SUMMARY** ø 0.125 **VENT HOLE MOUNTING FLANGE (EARS)** ¹#4-40 x 0.305" Ø 0.125 PIN NO MOUNTING FLANGE (EARS) STAINLESS STEEL **HEX SOCKET HEAD** COND.-CABLE NAME **VENTED JACK SCREW** WIRE ID #4-40 x 0.305" x 2 LOCATIONS **STAINLESS STEEL 25 COND.** V25A-40 HEX SOCKET HEAD CABLE **VENTED JACK SCREW** x 2 LOCATIONS #1-72 x 0.45" GOLD METALIZED OVER **FILLISTER HEAD** ELECTRO-LESS NICKEL **W2** 0.375in 9.53mm STAINLESS STEEL SELECTIVELY METALIZED #4-40 x 0.305" **MACHINE SCREW** 0.497in 12.62mm W3 STAINLESS STEEL otin 0.315 in 8 mmx4 LOCATIONS #1-72 x 0.45" W15 HEX SOCKET HEAD MOUNTING FLANGE (EARS) FILLISTER HEAD 0.109in 2.77mm **VENTED JACKSCREW** STAINLESS STEEL 0.375in 9.53mm x 2 LOCATIONS **MACHINE SCREW** Ø 0.225in | 5.72mm W5 x4 LOCATIONS W17 **⊅ 0.315in∣ 8mm** 0.311in 7.90mm 0.112in 2.84mm **⊅ 0.275in** 6.99mm 1.025in 26.04mm \emptyset 0.225in 5.72mm W19 1.852in 47.04mm 1.673in 42.49mm 000000000000 otin 0.275 in 6.99 mm0.648in 16.46mm 2.165in 54.99mm 1.675in 42.56mm W9 1.025in 26.04mm W21 1.673in 42.49mm 1.852in 47.04mm **W22** 0.648in 16.46mm 2.40in 61.02mm **PART NUMBER** QTY. LENGTH ITEM NO. **DESCRIPTION** W23 W12 2.165in 54.99mm TICOR# DB25 FEMALE CONNECTOR (J1) FOR UHV (PEEK) **W24** (TS0148-25C020BS1-225) W13 2 OR EQUIVALENT DB25 CONNECTOR BACKSHELL (NO EARS) FOR UHV (STAINLESS) 2.665in 67.69mm W25 TICOR # (TS0148-25CG20BS1-225F) 3 DB25 FEMALE CONNECTOR (J2) FOR UHV (GOLD METALIZED PEEK) ADDITIONAL LENGTH AS NECESSARY FOR THE INTERNAL WIRING OF THE CONNECTORS AND STRIP LENGTH. OR EQUIVALENT DB25 CONNECTOR BACKSHELL (WITH EARS) FOR UHV (STAINLESS) 25 COND. (12 TW PAIR + 1 WIRE + SHIELD) CABLE WITH (6) COPPER BRAID (SHIELD) AND (7) PEEK OVERBRAID C1 40in * COPPER BRAID - CONTINENTAL CORDAGE PART #24x3x40BC 40in * **CONTINENTAL PART #24x3x40BC** PEEK BRAID - PART #6759 MANUFACTURED WITH **(7**) #6759 40in * GLENAIR CLAMPING COPPER BRAID ZEUS 0.016" BLACK PEEK DRAWN MONOFILAMENT PEEK OVERBRAID 1 CONDUCTOR (SHIELD) GLENAIR # 600-052 or GLENAIR # 600-052 STANDARD BRAID CLAMP or BANDS # 600-052 2 BAND-IT PART # A10086 (0.240" WIDE) ("BAG OF 100" # A10089) BAND-IT # A10086 (BAND-IT # A10086) * NOTE: USE WHATEVER LENGTH IS NECESSARY FOR THE INTERNAL WIRING OF THE CONNECTORS AND 25 CONDUCTOR 28 AWG STRIP LENGTH TO ACHIEVE THE CORRECT OVERALL LENGTHS. 12 TWISTED PAIR + 1 WIRE **SUBSYSTEM** AIR/VAC NOTES: (UNLESS OTHERWISE SPECIFIED) A. MATERIAL: a. J1 CONNECTOR SHELL - PEEK VICTREX 450GL30. SEI IN-VAC b. J2 CONNECTOR SHELL - GOLD OVER ELECTRO-LESS NICKEL SELECTIVELY METALIZED PEEK VICTREX 450GL30. c. BACKSHELLS - STAINLESS STEEL WITH VENT HOLE. ISC IN-VAC d. CONTACTS - BERYLLIUM COPPER ALLOY C17300 0.000050 MIN. GOLD OVER NICKEL.

DRAWING TREE # DCN#

GOLD METALIZED OVER

ELECTRO-LESS NICKEL

SELECTIVELY METALIZED NOT TO SCALE CONNECTOR

> V-DB25 F/S1-40-DB25 F/S1 **TWISTED FROM** TO PAIR **12 TOTAL)** Conn. J2 Conn. J1 PIN 1. 40 in SHIELD SHELL SHELL 40 in PIN 2 PIN 2 TP-1 40 in **PIN 14 PIN 14** 40 in PIN 3 PIN 3 TP-2 40 in PIN 15 PIN 15 40 in PIN 4 PIN 4 40 in **PIN 16 PIN 16** PIN 5 PIN 5 40 in **PIN 17** 40 in PIN 17 40 in PIN 6 PIN 6 TP-5 **PIN 18 PIN 18** 40 in PIN 7 PIN 7 40 in PIN 19 PIN 19 40 in PIN 8 PIN 8 TP-7 40 in **PIN 20 PIN 20** PIN 9 40 in PIN 9 TP-8 PIN 21 PIN 21 40 in 40 in PIN 10 **PIN 10** TP-9 40 in **PIN 22 PIN 22** PIN 11 PIN 11 TP-10 40 in **PIN 23** PIN 23 40 in **PIN 12** PIN 12 40 in **PIN 24 PIN 24 PIN 13** PIN 13 40 in PIN 25 40 in PIN 25 * THE LENGTH SHOWN IN THIS LIST IS THE LENGTH OF THE CABLE BETWEEN THE TWO CONNECTORS. ADD

V-DB25 F/S1-40-DB25 F/S1 STANDARD USE FOR THIS CABLE STANDARD USE GS-13,L-4C OSEMS, LSC RFPD, IN VAC BEAM BLOCKER

NOTES AND TOLERANCES: (UNLESS OTHERWISE SPECIFIED) **CALIFORNIA INSTITUTE OF TECHNOLOGY** . INTERPRET DRAWING PER ASME Y14.5-1994. CUSTOM CABLE SPECIFICATION V25A-40 LIGO MASSACHUSETTS INSTITUTE OF TECHNOLOGY DIMENSIONS ARE IN 2. REMOVE ALL SHARP EDGES, .005-.015. FOR MACHINED PARTS. ROUND ALL EDGES APPROXIMATLEY R.02 FOR SHEET METAL PARTS. 3. DO NOT SCALE FROM DRAWING. SYSTEM SUB-SYSTEM TOLERANCES: DESIGNER B. ABBOTT MAY/01/2012 SIZE DWG. NO. 4. ALL MACHINING FLUIDS MUST BE FULLY SYNTHETIC, FULLY WATER SEI, ISC LIGO .XX ± MAY/01/2012 D DRAFTER E. BROWN SOLUBLE AND FREE OF SULFUR, SILICONE, AND CHLORINE. .XXX ± **NEXT ASSY** CHECKER ANGULAR ± ° Material <not specified> μınch **APPROVAL**

e. HARDWARE: STAINLESS STEEL, PASSIVATED

f. PEEK BRAID - PEEK VICTREX GRADE TDS-450CA30 CARBON LOADED - SUPPLIED BY LIGO.

CABLE 25 COND. 28 AWG, (40 STRD 44 AWG) WITH 2 LAYERS OF KAPTON TAPE. 12 TWISTED PAIRS (4 TO 5 TWISTS PER INCH) + 1 WIRE. OVERALL 40AWG COPPER BRAID 50% COVERAGE - SUPPLIED BY LIGO.

OVERALL PEEK BRAID MIN. 50% COVERAGE. OVERALL CABLE O.D. WILL BE 0.240 IN.

C. CONNECTORS WILL BE SUPPLIED WITH HARDWARE. SCREWS SHOULD BE THE PROPER LENGTH FOR MATING.

SCALE: 1:1 PROJECTION:

SHEET 1 OF 1