

MEPNN Supplier Scouting Opportunity Synopsis

Section 1: General Information

Scouting Number	2025-115
Item to be Scouted	Custom Optical Fiber Patch Cables
Days to be scouted	21
Response Due By	05/07/2025
Description	Custom optical fiber patch cables for ground-based astronomy. The ViaSpec fiber patch cable is comprised of a COTS optical fiber, 1.2 meters long, with an FC fiber connector terminating one end and a bare 1.25mm ceramic ferrule

Section 2: Technical Information

Type of supplier being sought	details. Manufacturer
Reason	These patch cables are key components of the spectrograph system being built for the Via Project. The fibers will transmit starlight from the focal plane of a 6.5-meter telescope to a custom spectrograph instrument (ViaSpec). These instruments will gather data that will lead to a better understanding of dark matter and other cosmic phenomena.
Details	New Product
Describe the manufacturing processes (elaborate to provide as much detail as possible)	The optical fiber, polytetrafluoroethylene (PTFE) tubing, Ferrule Connector (FC) connectors, and Lucent Connector (LC) ceramic ferrules are all COTS items. The FC connectors and LC ferrules have specified custom IDs. Each fiber will need to be threaded through the PTFE tube, terminated and polished on each end, serialized and labeled, and packaged per the attached drawing. We also request a final inspection report that includes FIBO interferometer (or equivalent) data for each fiber that verifies conformance to the drawing specifications in Note 11. Images of the fiber core in the ferrule are also requested, but not a driving requirement for procurement.
Provide dimensions / size / tolerances / performance specifications for the item	Refer to attached drawing.
List required materials needed to make the product, including materials of product components	Refer to assembly drawing and Bill of Materials.
Are there applicable certification requirements?	Yes
Certification(s) required	ISO 9001
Details	ISO 9001 or AS9100 compliance is preferred.
Are there applicable regulations?	No
Are there any other standards, requirements, etc.?	No
Additional Technical Comments	We are open to discussion of alternative epoxies, and crimp sleeve methodologies, otherwise the design is considered stable.

Section 4: Business Information

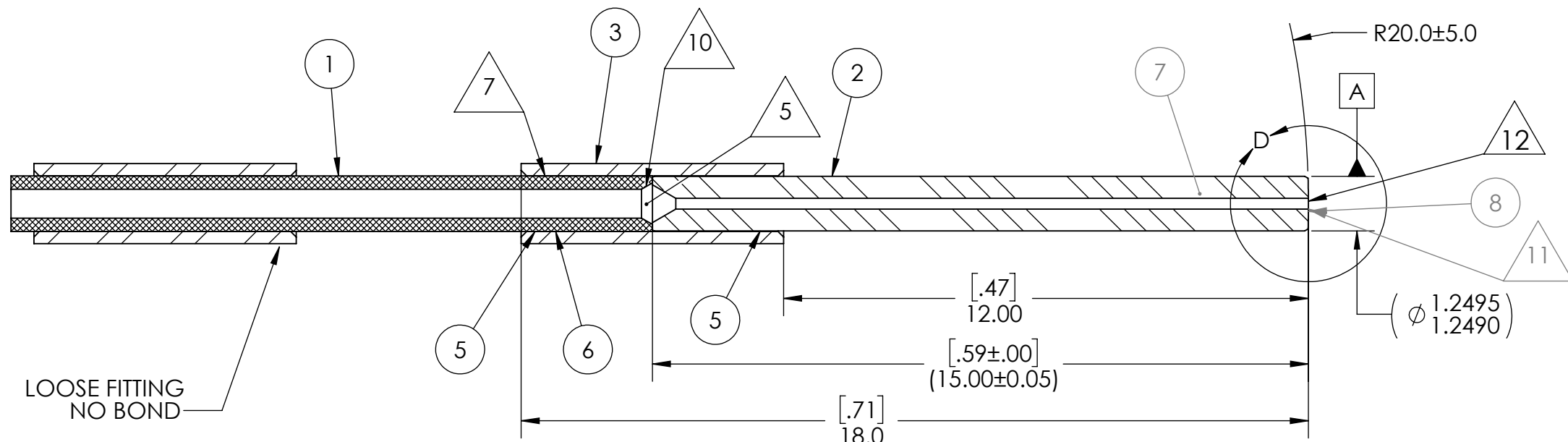
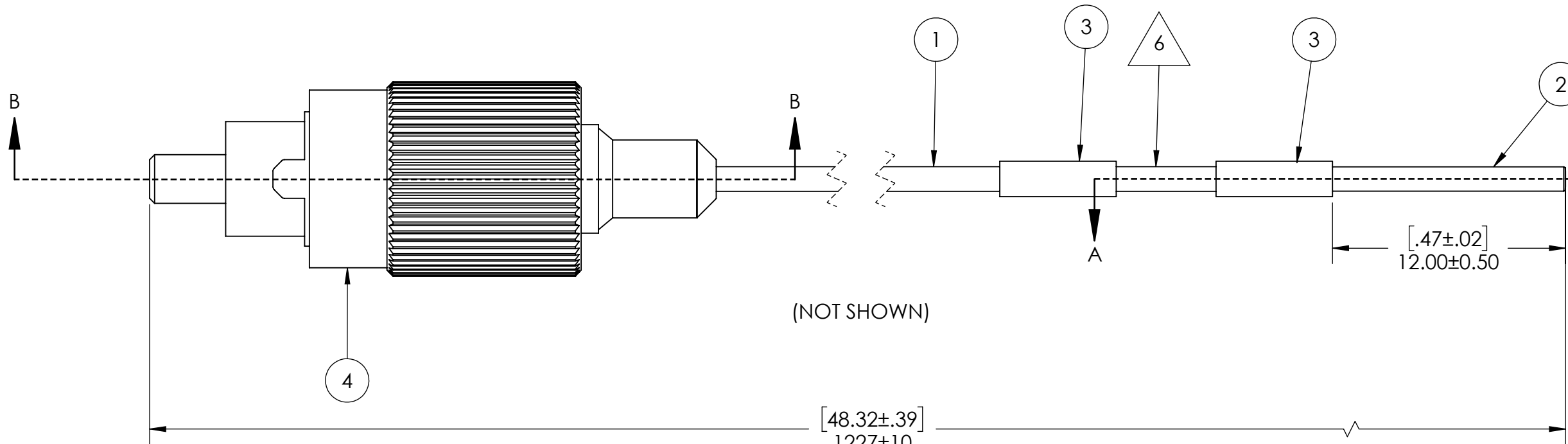
Estimated potential business volume	Approx 1500 assemblies to be ordered in 2025. Phase 1a: Prototype QTY 10 Phase 2: Production QTY 65 Phase 3: Production QTY 1400
Estimated target price / unit cost information (if unavailable explain)	Best available, acceptable pricing is to be determined in negotiation.

When is it needed by?	Prototypes for testing, delivered by 6/15/25 Production approval July 2025. Delivery 8 months post production approval.
Describe packaging requirements	Per drawing Note 13, cables should be packaged such that they will not be damaged during shipping and handling.
Where will this item be shipped?	These will ship to Center for Astrophysics Harvard & Smithsonian, 100 Acorn Park Drive, Cambridge, MA 02140, USA

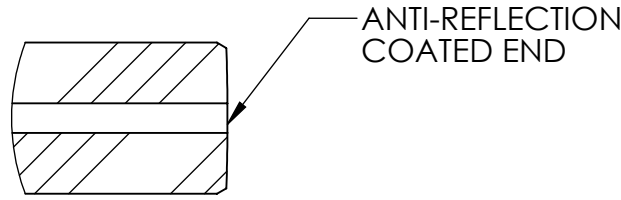
Additional Comments

Is there other information you would like to include?	The Via Project is using the Milky Way galaxy as a laboratory to answer fundamental questions about the nature of the universe. Via will conduct an all-sky survey of stars using the 6.5-meter MMT (Arizona) and Magellan (Chile) telescopes. The survey will utilize the ViaSpec instruments, which will be built and deployed on each of the telescopes. The project is a collaboration between Carnegie Observatories and the Center for Astrophysics Harvard & Smithsonian. See via-project.org for more information.
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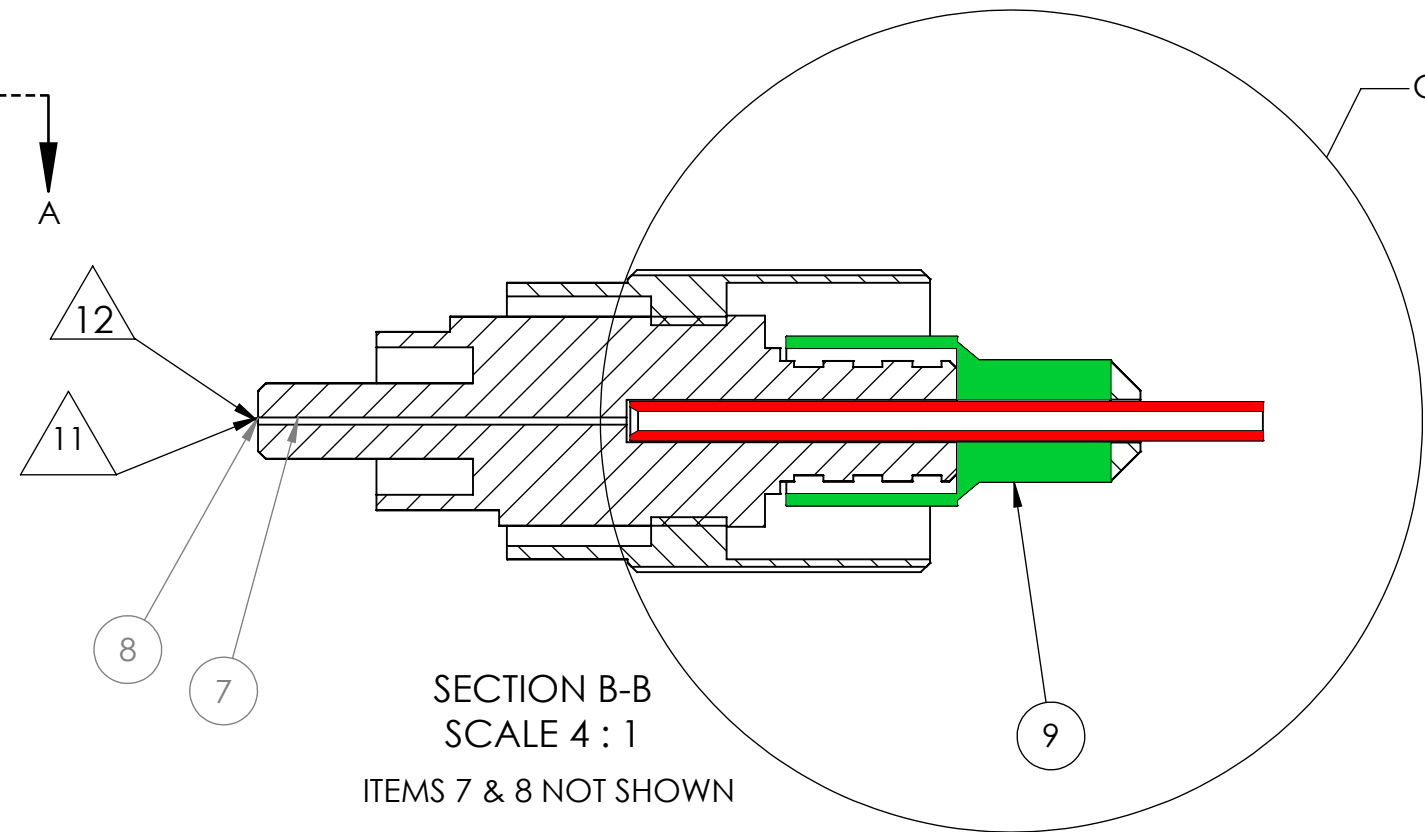
- UNLESS OTHERWISE STATED:
1. INTERPRET DRAWING IN ACCORDANCE WITH ANSI/ASME Y14.5-2009.
 2. ALL DIMENSIONS IN MILLIMETERS AND [INCHES]
 3. FINISHED ARTICLES SHALL BE FREE OF OILS, LUBRICANTS, DEBRIS, AND OTHER CONTAMINANTS PRIOR TO BEING PACKAGED FOR DELIVERY
 4. FIRST ARTICLE INSPECTION DIMENSIONS MUST BE VERIFIED, RECORDED, AND SUPPLIED WITH PART AT DELIVERY
5. FOR BONDING ITEMS 1, 2 AND ITEM 3, USE HYSOL 9313. ADHESIVE SHOULD NOT EXTEND INTO FERRULE ENTRY TAPER
6. MAKE FROM: ZEUS 23 AWG EXTRUDED PTFE STD WALL TUBING, EXTRUDED AND DELIVERED STRAIGHT, DO NOT SPOOL. FIBER SLEEVE MATERIAL SHOULD BE RELAXED AND STRESS FREE, WITH A MINIMUM SET BEND RADIUS OF ONE (1) METER
7. ENDS OF TEFLON TUBE WILL BE CHEMICALLY ETCHED BY ACTON TECHNOLOGIES INC. PRIOR TO BONDING TO ITEMS 3 AND 11 .CLEAN ITEMS 3 AND 11 WITH SIMPLE GREEN THEN CLEAN ITEMS 2, 3 AND 11 IN ISOPROPYL ALCOHOL. CLEANING SHOULD BE DONE IN AN ULTRASONIC BATH. CLEAN PARTS SHOULD BE HANDLED USING GLOVES TO AVOID CONTAMINATION.
8. MAKE FROM STOCK 15 GAUGE HYPODERMIC TUBING, MATERIAL STAINLESS STEEL: UNS S30300 (OPTIONAL: UNS S30400, UNS S31600, OR UNS S41600)
9. USE ITEM 7 302-3M EPOXY TO BOND FIBERS INTO FERRULES. APPLY THE MINIMUM AMOUNT OF EPOXY TO SECURE FIBER TO FERRULE FOR POLISHING
10. CHAMFER TEFLON TUBE ID EDGE, BOTH ENDS, PRIOR TO INSTALL ITEM 3 USING DREMEL #9909 TUNGSTEN CARBIDE CARVING BIT
11. POLISHED FIBER FACE TO LAMBDA/4 WITH A REFERENCE WAVELENGTH OF 633 NANOMETERS. SURFACE ROUGHNESS LESS THAN 0.5 MICRON. POLISHED FIBER SURFACE ANGLE RELATIVE TO DATUM A: < 0.2 DEGRESS REQ. (<0.1 DEGREE GOAL) RADIUS OF CURVATURE 15-25mm
12. STANDARD FC MACHINE POLISH PROCESS MEETING QUALITY OF NOTE 11
13. PACKAGE IN PROTECTIVE CONTAINER AND TAG WITH PART NUMBER, REVISION, SERIAL NUMBER AND PO NUMBER
14. STRAIN RELIEF BOOT FOR FC CONNECTOR IS REQUIRED BUT NOT SHOWN FOR CLARITY OF FC CONNECTOR ASSEMBLY
15. FIBO IMAGE DATA SAVED FOR EACH FIBER. MUST INCLUDE IMAGE OF FIBER CORE IN FERRULE, RADIUS OF CURVATURE, SURFACE ANGLE OF FIBER FACE AND CENTRATION OF FIBER CORE WRT FERRULE OD
16. LABEL EACH ASSEMBLY WITH A SERIAL NUMBER



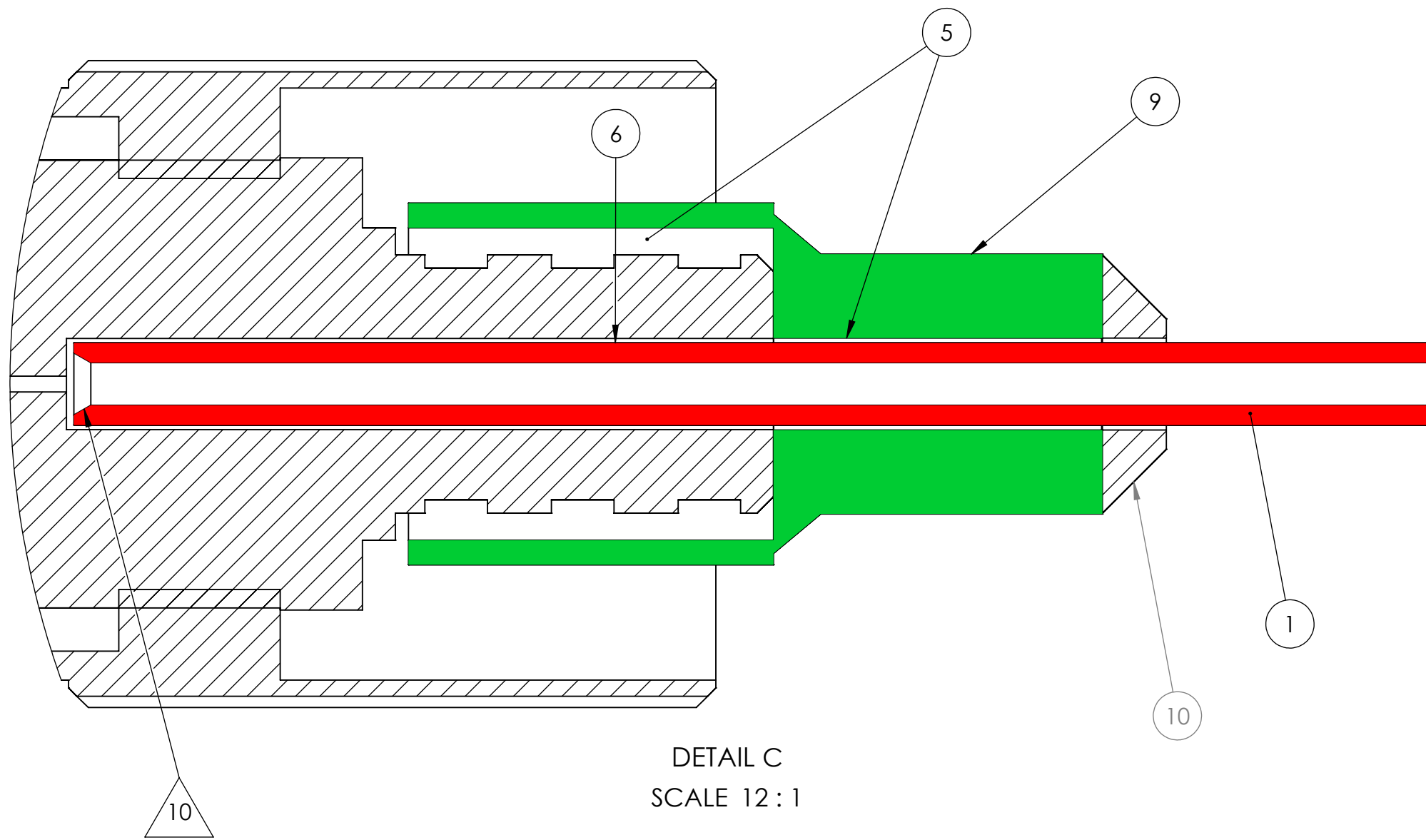
SECTION A-A
SCALE 8 : 1
ITEMS 7 & 8 NOT SHOWN



DETAIL D
SCALE 16 : 1



SECTION B-B
SCALE 4 : 1
ITEMS 7 & 8 NOT SHOWN



DETAIL C
SCALE 12 : 1

PRELIMINARY FOR MANUFACTURE QUOTE 4/10/25

ITEM NO.	NUMBER	DESCRIPTION	QTY.	MATERIAL	SUPPLIED BY
1	VIA000219T-1	TUBING, 23 AWG, FIBER PATCH CABLE	1	PTFE	SAO
2	VIA000219T-2	FERRULE, FIBER PATCH CABLE ICD	1	ZIRCONIA	SAO
3	VIA000219T-3	SUPPORT TUBE, FIBER PATCH CABLE ICD 6mm LONG	2	ALSI 304 OR 316	VENDOR
4	MM-CON2004-2800-2-BLK-EE	FC CONNECTOR	1		SAO
5	EA9313	EPOXY, STRUCTURAL, HYSOL	AR	REF. MSDS	VENDOR
6	101270-100	FLUOROETCH (NOT SHOWN)	AR	REF. MSDS	SAO
7	302-3M EPOXY	302-3M EPOXY TO BOND FIBER TO FERRULE.	AR	REF. MSDS	SAO
8	1068022187	MOLEX FBP200240275 OPTICAL FIBER (NOT SHOWN)	AR	REF. SPEC	VENDOR
9	BONDING SLEEVE	TBD RESEARCHING PROPER SIZE	1	ALUMINUM	SAO
10	EPOXY FILLET	HYSOL 9313 EPOXY	1	REF. MSDS	SAO

FOR QUOTATION ONLY
NOT FOR FABRICATION

DWG VERSION 55

AUTHORED BY: A. CLINE	TOLERANCES UNLESS OTHERWISE NOTED ±0.XX = ±0.13 ±0.X = ±0.25 NO DECIMAL = ±1 ANGLES = ±1°			SMITHSONIAN ASTROPHYSICAL OBSERVATORY 100 Acorn Park Drive Cambridge, MA 02140
CHECKED BY: J. ZAJAC				
INSTRUMENT PI APPROVAL: D. FABRICANT	FIBER PATCH CABLE, FIBER POSITIONER, VIASPEC	SHEET SIZE D	SCALE 1:5	The data in this document incorporate proprietary rights of the Smithsonian Astrophysical Observatory. Any party accepting this document does so in confidence and agrees that it shall not be duplicated in whole or in part, nor disclosed to others, without the consent of the Smithsonian Astrophysical Observatory.
INSTRUMENT ENG. APPROVAL: D. CATROPA				
NEXT ASSEMBLY: TBD				
COMPONENT MATERIAL: SEE BOM				
COMPONENT WEIGHT (kg): REF. CAD MODEL	DWG NO. VIA000219T	REVISION 01	SHEET 1 of 1	