

CONSTRUCTION TIME

SHEAR PROBE CONSTRUCTION

Recordkeeping Procedures

Only use numbers one time. Maintain log book for construction and calibration information.

General Tests

1. Resistance testing
2. Static response

Probe Construction

1. Beam Selection

Microscopic examination.

Resistance Check.

Capacitance Check.

2. Attach Leads

Use low-temp solder (silver solder). Minimize amount of solder, heat used. Re-check resistance after cooling. Microscope exam to insure no "drip" across junctions.

3. Remove Leading Corners

Use low power microscope, jeweler's file; hold with tweezers to avoid contamination. Inspect afterwards for smooth corners, re-check resistance.

August 25, 1981

4. Seal Beam

Necessary for: 1. Ease of handling , 2. Provide ultimate protection against moisture in event final potting compound is broken or pressure leaks occur.

Apply cyanocrylic glue (e.g. Eastman 910 EH), shake off excess. Cover with heat shrink tubing. Flame seal and crimp end. Trim off excess while maintaining seal. Water test overnight.

5. Epoxy

Insert beam assembly into barrel. Slip on surgical tubing. Add heat shrink mold around barrel. Clamp barrel in jig. Align and clamp beam in separate clamp after verifying correct extension. Tie off surgical tubing. Prepare epoxy, pour same into syringe. Using controlled pressure, fill barrel with epoxy--careful not to introduce air bubbles. Remove from mold and trim excess epoxy. Re-check resistance, watertight seal on beam end.

6. Silicone Potting

Clean molds, do not make "squeaky-clean". Add small amount of mold release if necessary. Screw together mold, clamping tight. Mount probe into mold, ensuring beam is correct distance from tip prior to tightening locknut. Mix potting compound and evacuate. Load syringe and mount in mold. Inject potting compound using controlled pressure. Mold should be mounted in vise with air outlet up. Use care to avoid introduction of air into mold. After compound extrudes out of outlet hole, remove syringe controlled pressure mechanism and replace with rubber band to maintain slight pressure on plunger. Cure potting compound in oven. Remove, and allow to cool so that compound separates easily from mold. Remove mold, trim flashing with sharp scalpel. Re-check resistance and store in safe holder.

Dynamic Calibration

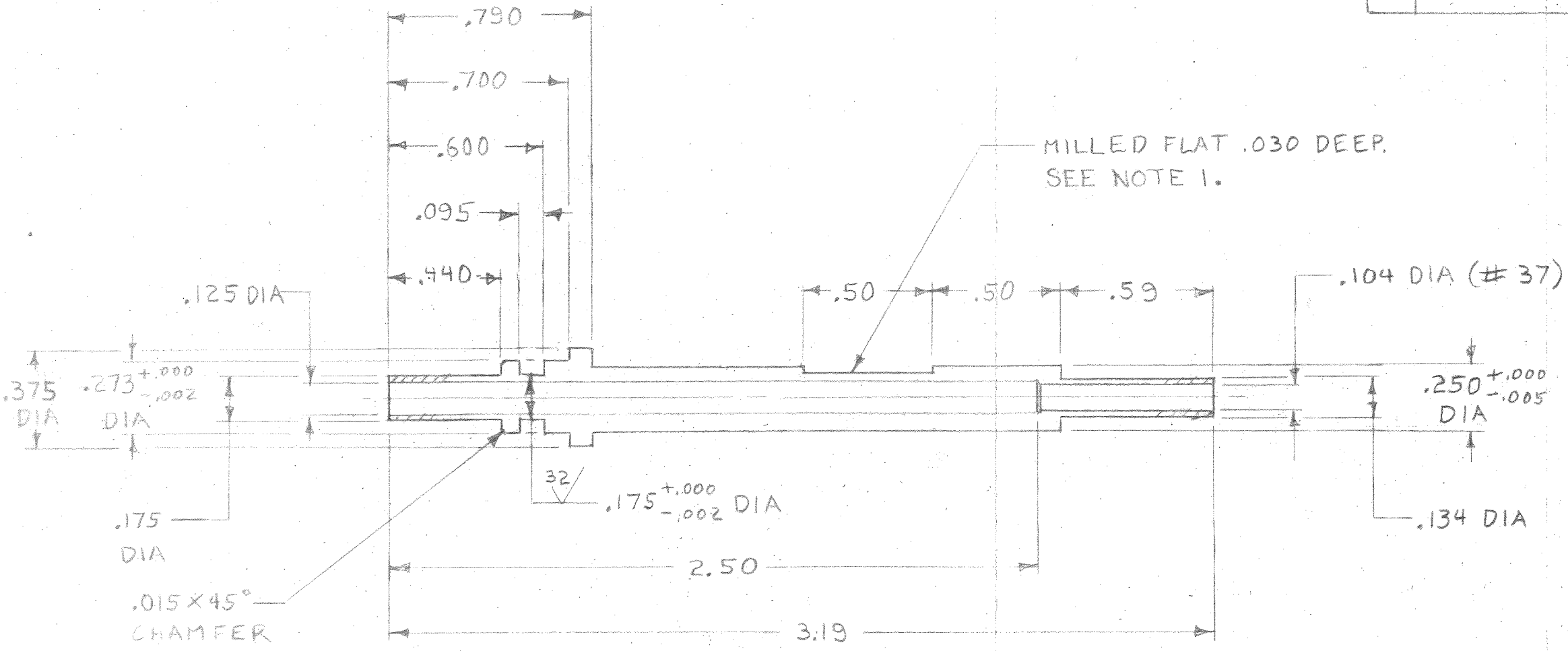
(NEED TO ADD):

Reference Figures

Construction Time Estimates

Sample Worksheet

REV.	DESCRIPTION	DATE	APPROVED
A	ADDED O-RING RETAINER	4-28-82	EEA
B	REPLACED 14° TAPERED SURFACE WITH SHOULDER	9-23-82	EEA
C	ADDED NOTE 1	4-7-83	DRAG



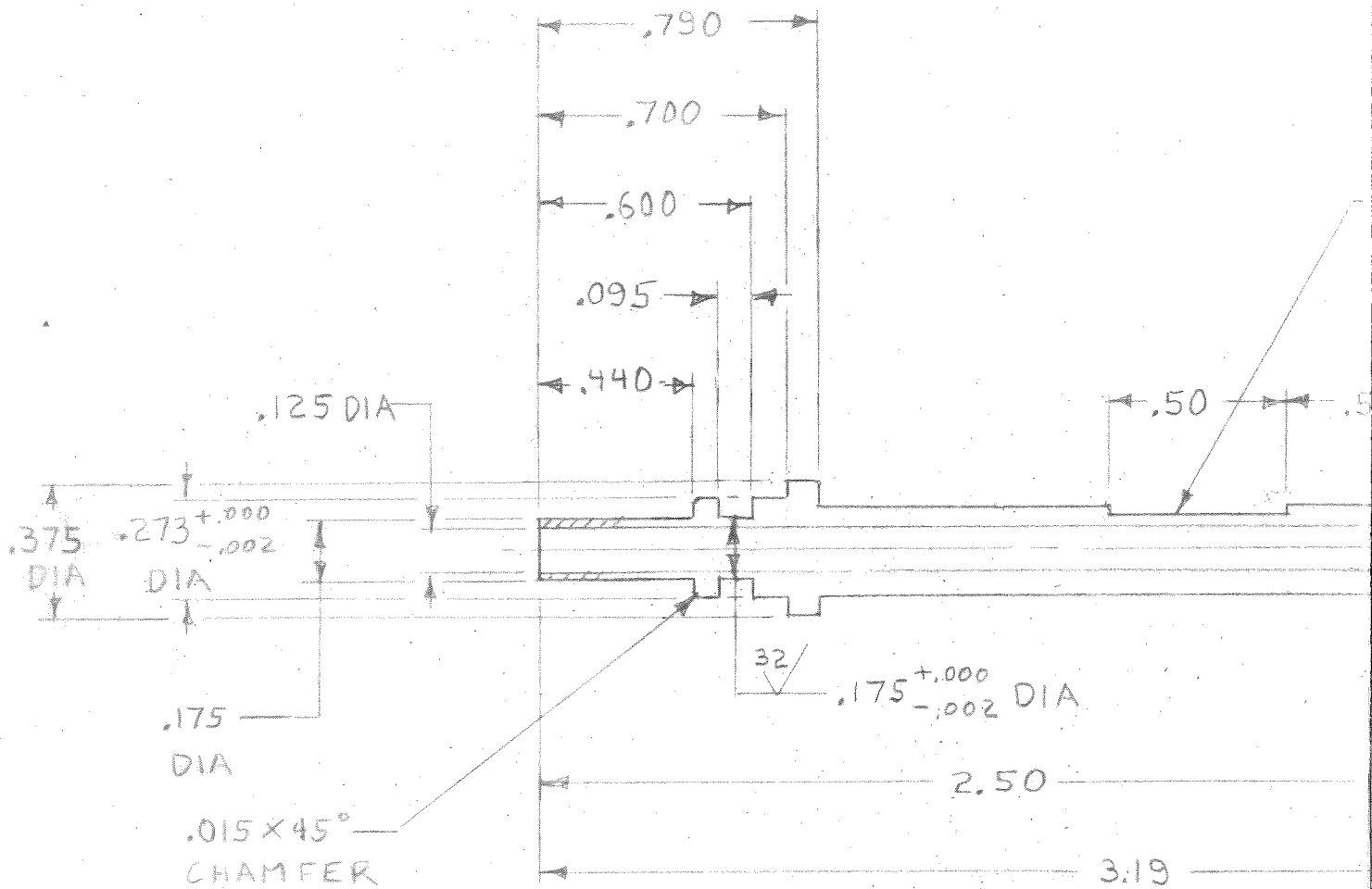
APR 4 1983

NOTES:

- 1. ENGRAVE SERIAL NO. ON FLAT. NUMBERS ARE TO BE SUPPLIED BY PARTY SUBMITTING BUILD REQUEST.

©

QTY REQD	FSCM NO.	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	MATERIAL SPECIFICATION
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS DECIMALS ANGLES ± .XX ± .02 ± 0°30' ± .XXX ± .005			CONTRACT NO.	
MATERIAL		APPROVALS		DATE
FINISH		DRAWN EEA		
NEXT ASSY		CHECKED		
USED ON		ISSUED EEA		10-9-82
APPLICATION		DO NOT SCALE DRAWING		
			SIZE B	FSCM NO.
			DWG. NO. 39797	REV. B
			SCALE 2/1	SHEET



NOTES:

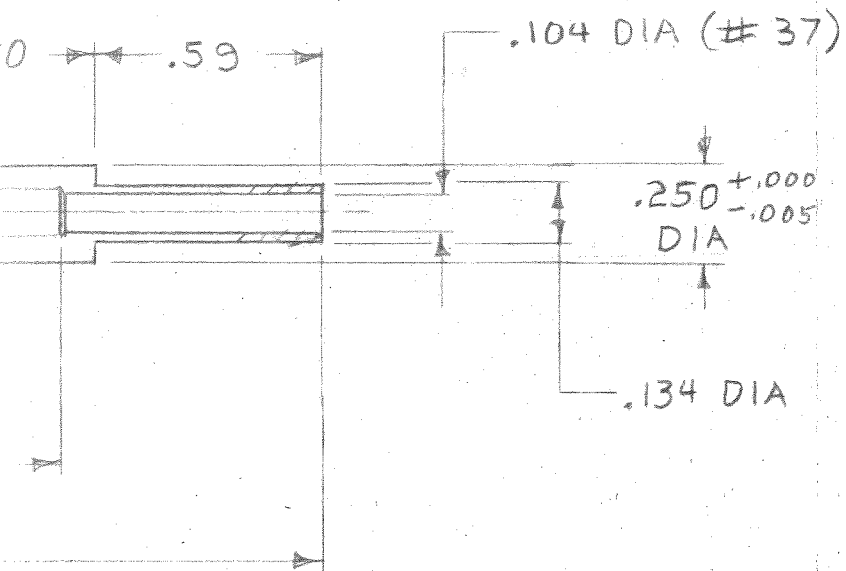
1. ENGRAVE SERIAL NO. ON FLAT. NUMBERS ARE TO BE SUPPLIED BY PARTY SUBMITTING BUILD REQUEST.

UNLESS DIMENSIONS TOLERANCES FRACTIONAL ±
MATERIAL
FINISH
DC

	DL-38272
NEXT ASSY	USED ON
APPLICATION	

REV.	DESCRIPTION	DATE	APPROVED
A	ADDED O-RING RETAINER	4-28-82	EEA
B	REPLACED 14° TAPERED SURFACE WITH SHOULDER	9-23-82	EEA
C	ADDED NOTE 1	7-7-83	DMAG

MILLED FLAT .030 DEEP.
SEE NOTE 1.



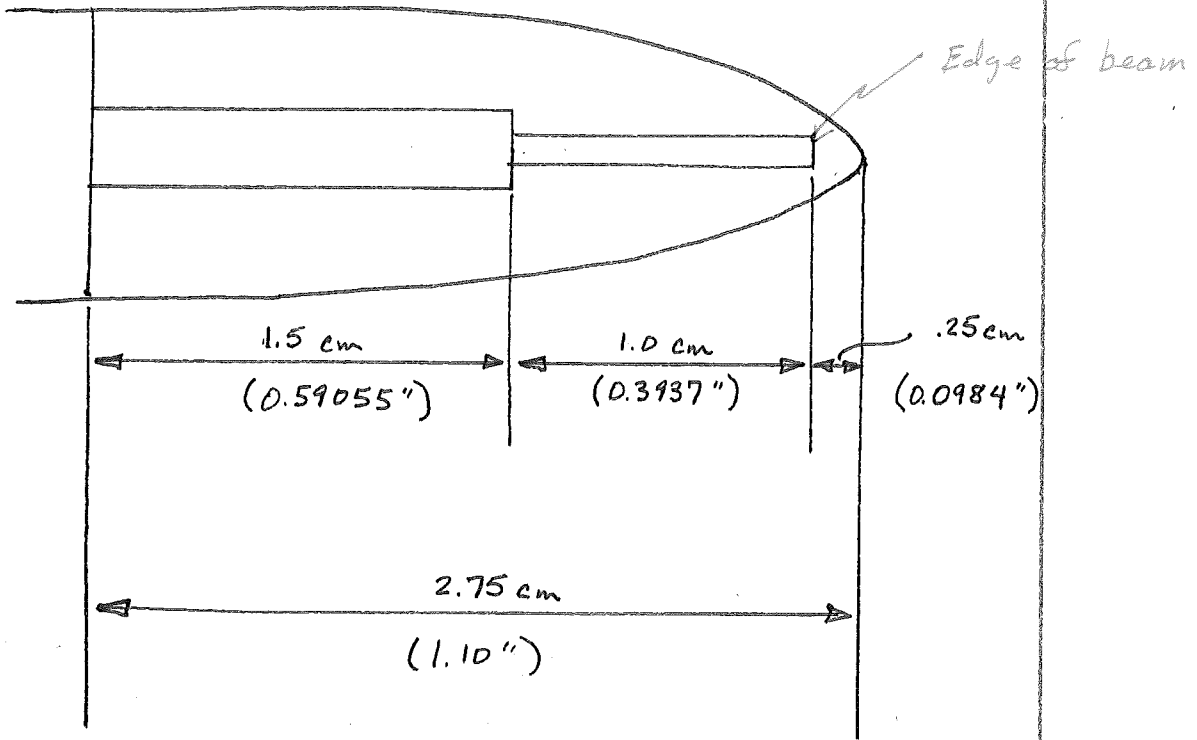
APR 4 1983

QTY REQD	FSCM NO.	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	MATERIAL SPECIFICATION
PARTS LIST				
OTHERWISE SPECIFIED UNITS ARE IN INCHES UNLESS OTHERWISE SPECIFIED:		CONTRACT NO.		
UNITS	DECIMALS	ANGLES	SHEAR PROBE BODY	
	.XX ± .02	± 0°30'		
	.XXX ± .005			
APPROVALS		DATE		
DRAWN EEA				
CHECKED				
ISSUED EEA/gard		10-9-82	SIZE B	FSCM NO.
NOT SCALE DRAWING			DWG. NO. 39797	REV. B
			SCALE 2/1	SHEET

215-006

4/19/83

Shear Probe Tip (STAINLESS)

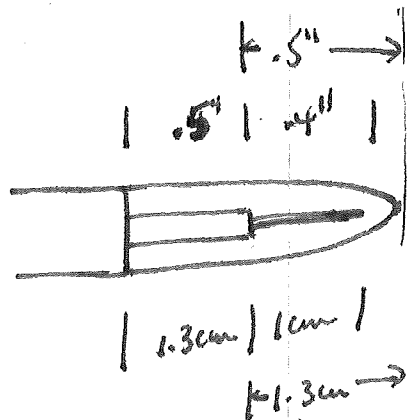


notes:

- Measurements above are intended as "typical".
- Important parameter is to have beam as close as possible to tip while still allowing adequate coverage with potting compound.
- Outside length of potting compound from tip to base should remain quite constant if probe is fully seated in potting mold.

1981

	<u>Bross</u>	<u>Stamiles</u>
Barrel	4.8 cm	4.6 cm
1/8 tube extension length	1.3 cm	1.5 cm
Beam Extension	0.4 inches ~ 1.0 cm	1.0 cm
Rubber tip	0.5" 1.25 cm	0.5" 1.25 cm



6 ea

4 ea

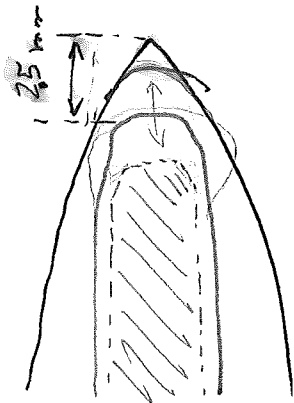
$$2.5 \text{ cm} = .98425''$$

$$1.5 \text{ cm} = .59055''$$

$$1 \text{ cm} = .3937''$$

$$1.3 \text{ cm} = .51181''$$

211-003



Don RWOY - Testing