CONSTRUCTION INFO

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.

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 "squeeky-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 compund 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

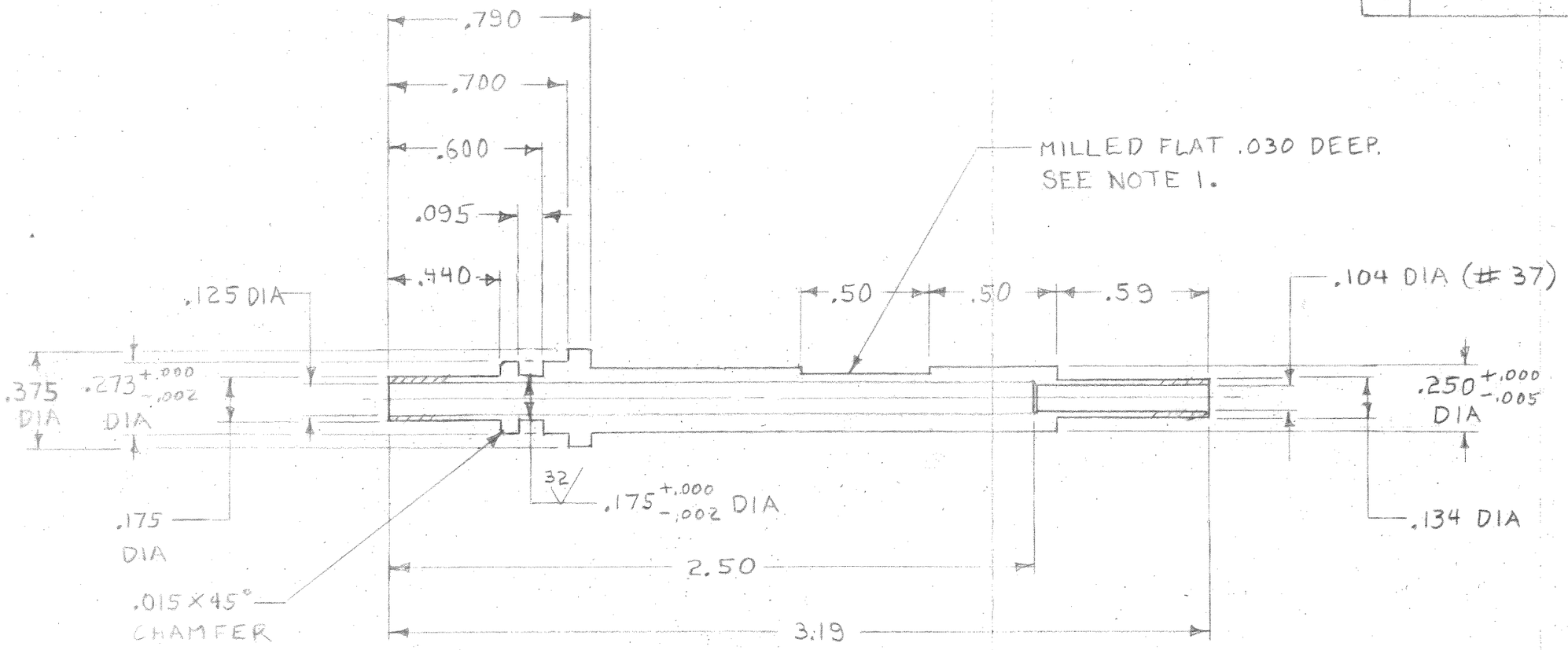
(NEED TO ADD):

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	4-4-83	DHHJ



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 .XX ±.02 .XXX ±.005 ANGLES ±0°30'

MATERIAL

FINISH

CONTRACT NO.

APPROVALS	DATE
DRAWN EEA	
CHECKED	
ISSUED EE Wagoner	10-9-82

SHEAR PROBE BODY

NEXT ASSY	USED ON
	DL-38272

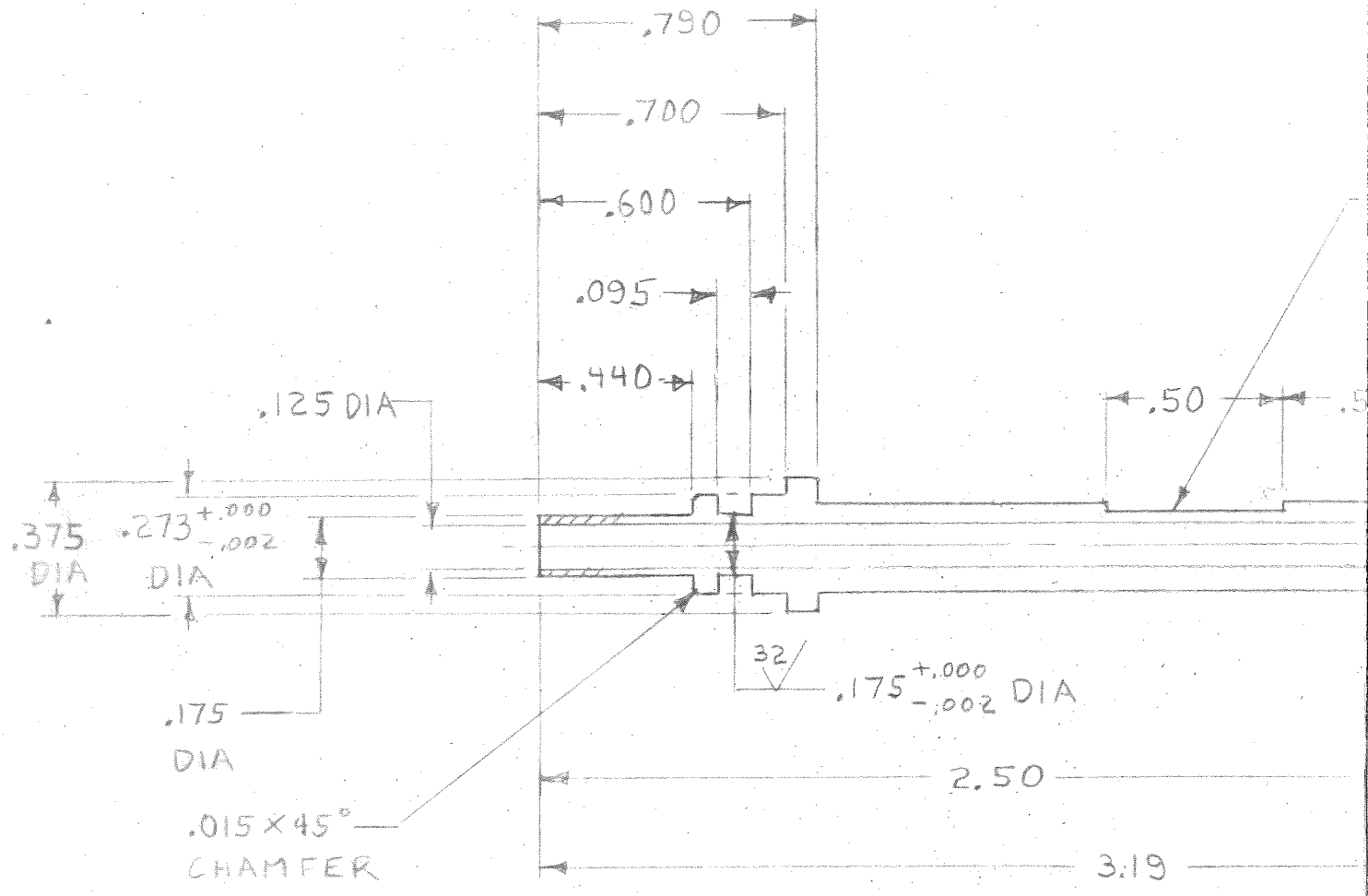
APPLICATION

DO NOT SCALE DRAWING

SIZE	FSCM NO.	DWG. NO.	REV.
B		39797	B

SCALE 2/1 SHEET

215-006



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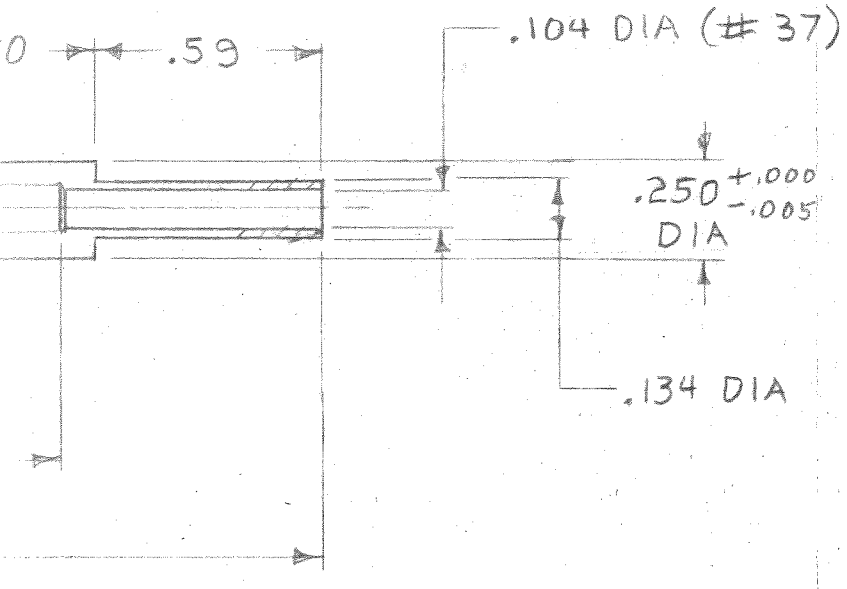
	DL-38272
NEXT ASSY	USED ON
APPLICATION	

UNLESS DIMENS TOLERA
FRACTIO ±
MATERIA
FINISH
DO

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	DKHJ

MILLED FLAT .030 DEEP.
SEE NOTE 1.



APR 4 1983

QTY REQD	FSCM NO.	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	MATERIAL SPECIFICATION	

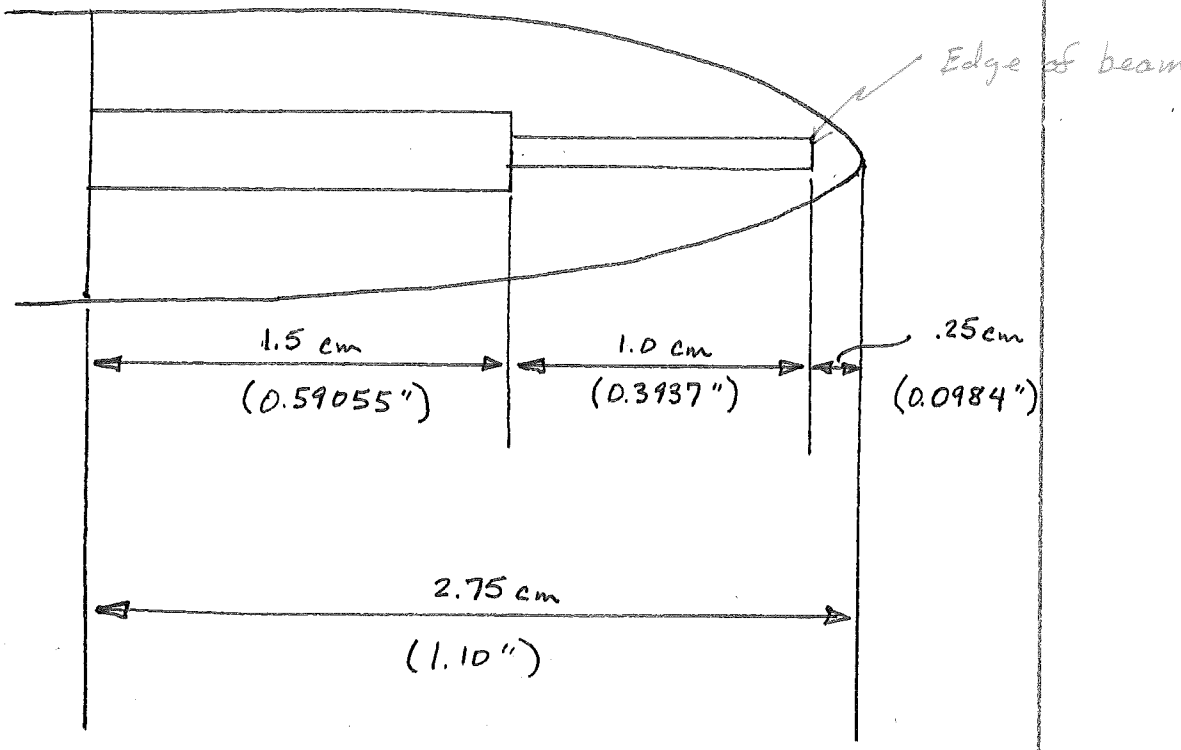
PARTS LIST

OTHERWISE SPECIFIED ONS ARE IN INCHES NCES ARE: NS DECIMALS .XX ± .02 .XXX ± .005 ANGLES ± 0° 30'	CONTRACT NO.		
	APPROVALS	DATE	SHEAR PROBE BODY
	DRAWN EEA		
	CHECKED		SIZE B | FSCM NO. | DWG. NO. 39797 | REV. B
	ISSUED E E Hegaard	10-9-82	
NOT SCALE DRAWING			SCALE 2/1 | SHEET

215-006

4/19/83

Shear Probe Tip (STAINLESS)

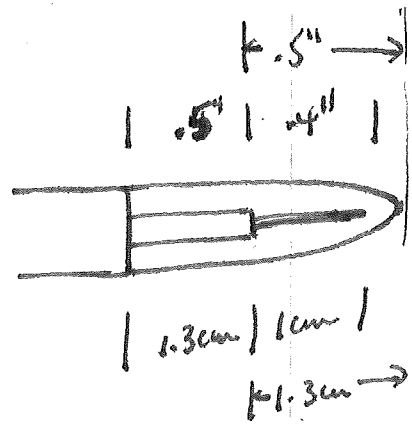


notes:

- 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.

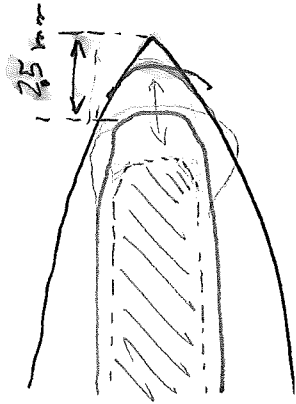
1981

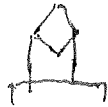
	Brass	Stainless
Barrel	4.8 cm	4.6 cm
1/8 tube extension length	1.3 cm	1.5 cm
Beam Extension	0.4 inches ~1.0 cm	1.0 cm
Rubber tip	0.5" 1.25 cm	0.5" 1.25 cm
	6 ea	4 ea



2.5 cm = .98425"
1.5 cm = .59055"
1 cm = .3937"
1.3 cm = .51181"

211-0023





Don RWOOY - Testing