

## NONCONFORMANCE REPORT

Project No. 20-01402-571

NCR No. 2002-08

### PART 1: DESCRIPTION OF NONCONFORMANCE:

One of the Alloy 22 weld qualification specimens CNWRA Drawing 20-01402-571-025 machined by Texas Toolmakers was not machined correctly. A detailed description of the non conformance items is provided below:

1. All plates: The 1.00 inch dimension (plate thickness) was not machined. Thickness of machined specimens was left as the nominal plate thickness.
2. Plate S/N 003: The 0.250 inch dimension was not recorded on the dimensional inspection for plate S/N 003.
3. Plate S/N 006: Thermocouple bore was machined too deep and has nearly penetrated through the weld joint surface.

Initiated by: Darrell S. Dunn

Date: 7/16/2002

### PART 2: PROPOSED DISPOSITION AND CORRECTIVE ACTION

#### Disposition:

Accept specimens as is.

#### Basis of Disposition:

The missing dimensional inspection for the 0.250 inch dimension on plate S/N 003 (diameter of thermocouple hole) is an oversight during the dimensional inspection of this part. The nominal plate thickness which is slightly greater than 1.00 inch is acceptable for the weld procedure qualification specimens. Plate S/N 006 was rejected on the basis of the incorrectly machined thermocouple bore. Repair of weld procedure qualification specimen S/N 006 will be performed if needed and all dimensions will be reinspected and documented.

#### Action to Correct Nonconformance:

The three items listed in Part 1 were discussed with staff at Texas Toolmakers (Mike and Casey Ridgway).

Item #1: Plate thickness is not normally not machined for this type of specimen. Corrections to CNWRA Drawing 20-01402-571-25 are recommended. The 1.00 +/- 0.010 inch dimension for plate thickness should be changed to 1 inch nominal thickness.

Item #2: The 0.250" hole diameter will be verified by SwRI staff and documented on dimensional inspection for Plate S/N. 003.

Item #3: No corrective action will be taken at this time. Plate will be tagged indicating out of tolerance dimensions. If weld procedure qualification specimen S/N 006 is used, it will be repaired and re machined. All repair work will be performed at SwRI or a vendor on the SwRI Approved Supplier List and documented.

Target date for completion: 7/19/2002

Proposed by: Darrell S. Dunn

Date: 7/16/2002

### PART 3: APPROVAL

Element Manager:

Date:

7/16/2002

Director of QA:

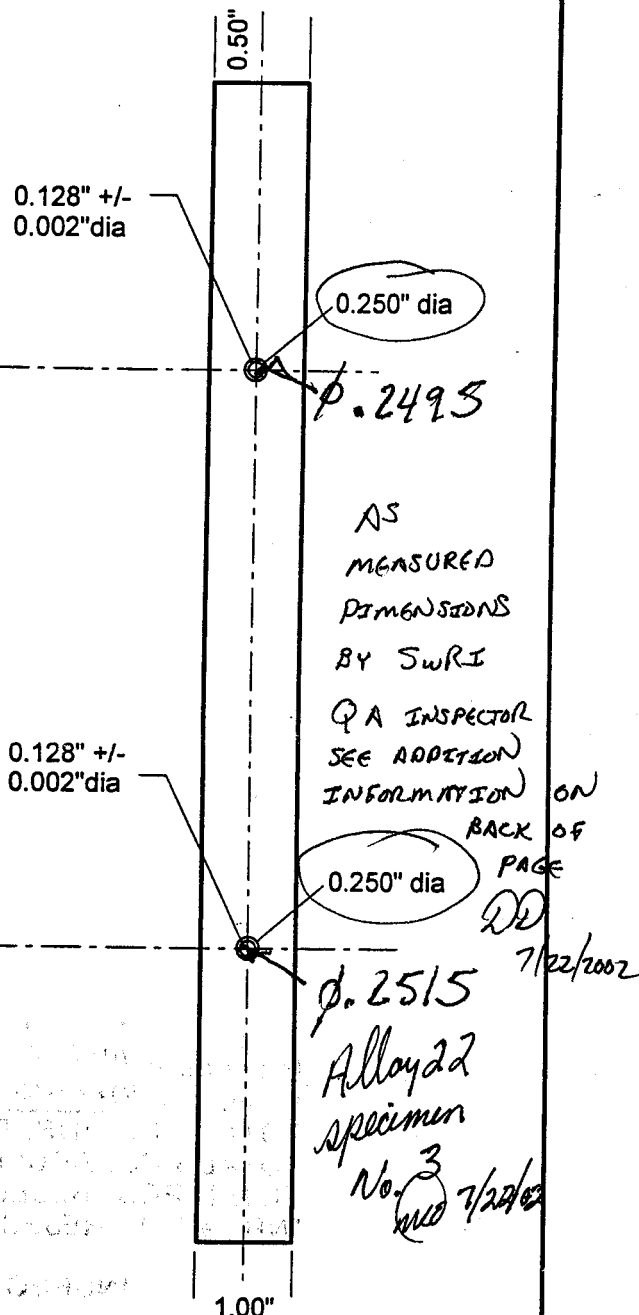
Date:

7/17/2002

Comments/Instructions:

<p><i>Item 1 - Drawing 20-1402-571-25 has been revised to reflect a 1" nominal thickness.</i></p> <p><b>PART 4: CLOSE OUT:</b></p> <p><i>Comments: Item #2 - Hole diameters were measured and found acceptable. Item #3 - Specimen 06 will not be used to qualify a welding procedure and will not be used for testing purposes. Ref Memo D. Dunn to B. Malita 3/24/03</i></p> <p>Verified by: <i>Mark R. Ehnstom</i> Date: <i>3/24/03</i></p>	<p><b>Distribution:</b></p> <p><i>20/55</i></p>
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To be completed at time of order:  
Material: ALLOY 22 34/55  
Heat: 2277-1-3164  
Specimen Orientation: \_\_\_\_\_  
Other: \_\_\_\_\_



A diagram of a tapered shaft. The left end is circular and is highlighted with a circle. The shaft tapers to the right. A dashed line runs along the length of the shaft, indicating a central axis or a specific feature.

QA Approval B. Mabrito 5/22/002  
Date

SWRI  
24  
QA

JUL 18 2002

## Bruce Mabrito

---

**From:** Darrell Dunn [ddunn@cnwra.swri.edu]  
**Sent:** Monday, March 24, 2003 11:05 AM  
**To:** Bruce Mabrito; 'mark ehnlstrom'  
**Subject:** Repaired weld specimen

The repaired weld specimen which was the subject of NCR 2002-08 will not be used to qualify a welding procedure. The plate will be used as a practice piece for a fabrication shop to weld Alloy 22 with the current waste package weld joint design. The welded specimen will not be used for testing. The quality of the weld will be evaluated using radiographic testing (RT).

Darrell S. Dunn  
Center for Nuclear Waste Regulatory Analyses  
Southwest Research Institute  
6220 Culebra Road  
San Antonio, TX 78238-5166  
Phone: 210-522-6090  
Fax: 210-522-5184  
e-mail: ddunn@swri.org



PURCHASE REQUISITION

SOUTHWEST RESEARCH INSTITUTE™

PURCHASING

REQUISITION DATE

5/22/02

ORDER DATE

PURCHASE ORDER NUMBER

REQ. NO.

610121

SUGGESTED OR PREVIOUS SUPPLIER

Texas Toolmakers

DELIVER TO

Darrell Dunn/bldg. 57

PURCHASING SELECTED SUPPLIER

CITY, STATE

San Antonio, TX

SHIP VIA

ATTN:

Mike Ridgway

F.O.B.

SUPPLIER CODE

ATTN

PHONE

494-3651

FAX

494-6139

TERMS

PHONE

FAX

LN.	QTY.	UNIT	DESCRIPTION	ORG	PROJECT	ACCT	%	DATE REQUIRED	EST. UNIT PRICE
A	6	EA	C22 weld procedure qualification						
			specimens CNWRA drawing 20-01402-571-025	20	01402	571	100	6/12/02	749.00
			Quality & Technical Requirements: Specimens as per CNWRA drawing 20-01402-571-025. Dimensional inspection per dimensions and tolerances identified in CNWRA drawing 20-01402-571-025 is required.						

INTERNAL NOTES TO BUYER

SPECIAL INSTRUCTIONS TO SUPPLIER

TOTAL

1. Government Project? ☒ YES ☐ NO

IF YES, CHECK THE APPROPRIATE PROPERTY TYPE (SEE BACK FOR EXPLANATION OF PROPERTY TYPES)

a ☒ G-1 CONSUMABLEb ☐ G-2 DELIVERABLEc ☐ G-3 ACCOUNTABLE / REPORTABLE

d IS GOVT. PROPERTY BEING SENT TO SUPPLIER?

☒ YES☐ NO2. QUALITY ASSURANCE? ☒ YES ☐ NOa ASL REQUIRED? ☒ YES ☐ NO

b QA CODES: Q11

c INSPECTION CRITERIA

P.I. to inspect upon receipt.

d QA APPROVAL (IF REQUIRED)

DATE

Mark R. Elmsstrom 5/22/02

3. SOURCING NOTES

IF YOU HAVE SELECTED A BRAND NAME OR PARTICULAR MANUFACTURER, WOULD AN EQUIVALENT BRAND OR PRODUCT ALSO SATISFY YOUR NEED? ☒ YES ☐ NO

IF YOU HAVE SUGGESTED A SUPPLIER, AND NO OTHER SUPPLIER WILL MEET YOUR NEEDS, PLEASE ATTACH A MEMO OF EXPLANATION.

REQUESTOR'S SIGNATURE

Darrell Dunn

EXT. NO.

6090

DEPT. / DIVISION APPROVAL

DATE

5/27/01

ADMIN. APPROVAL

DATE

4. REPAIRS

a IS THIS REQ. FOR A REPAIR?

☒ YES ☐ NO

b IS THE REPAIR ON OR OFF CAMPUS?

☐ ON ☒ OFF

c IF OFF CAMPUS PROVIDE SHIPPING TICKET

NO.

21/55

CONTRACT REVIEW APPROVAL

DATE

BUYER SIGNATURE

DATE

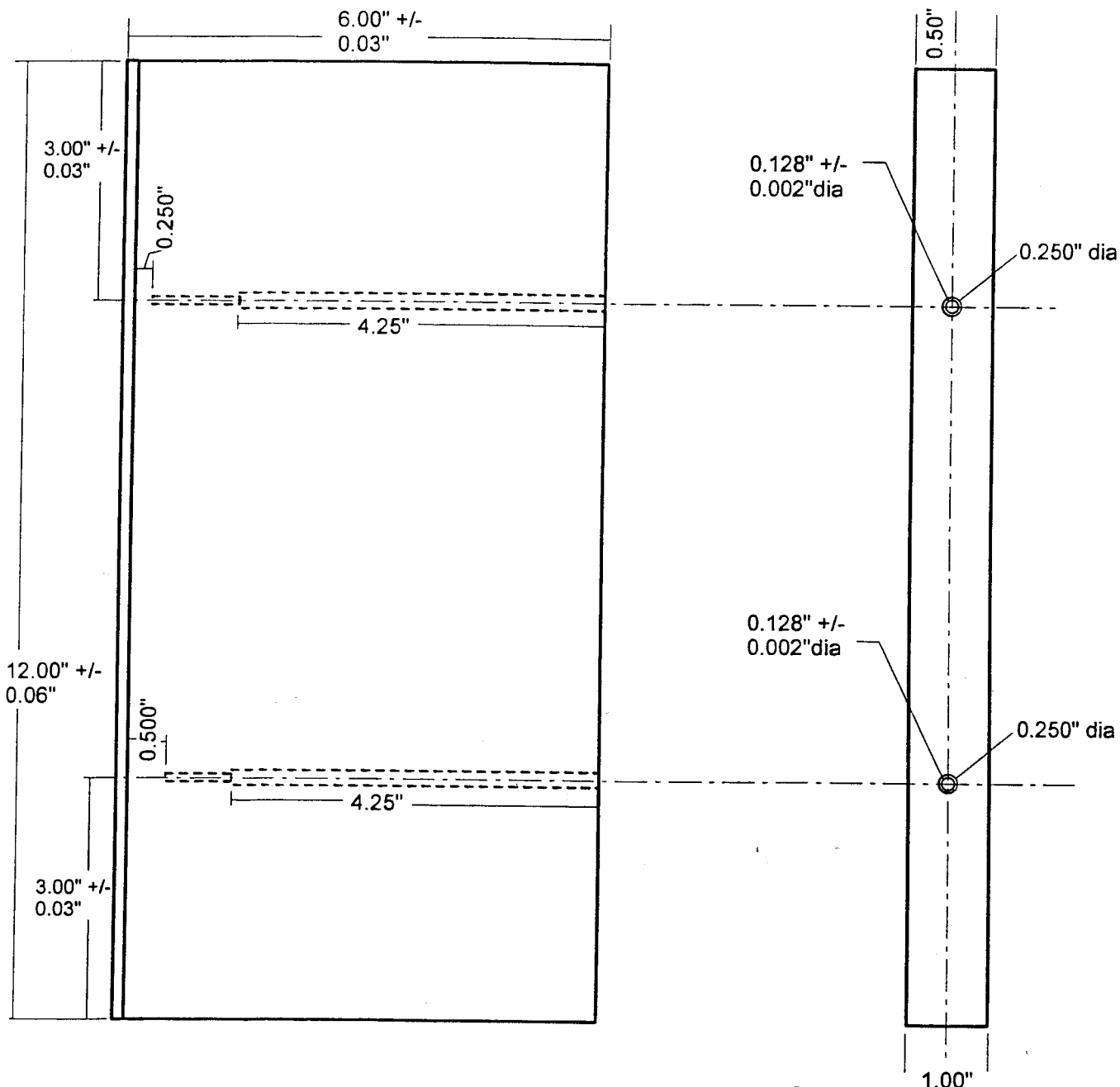
SEE INSTRUCTIONS ON REVERSE SIDE

Darrell S. Dunn  
SwRI-CNWRA  
Phone: (210) 522-6090  
Fax: (210) 522-5184  
e-mail: ddunn@swri.org

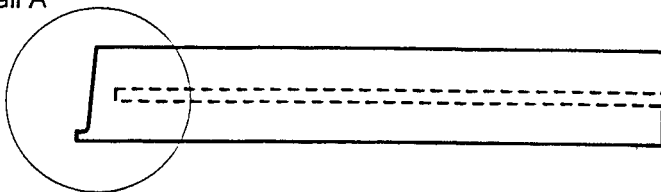
Alloy 22 Id Specimen  
CNWRA Drawing 20-01402-571-25  
All Dimensions  $\pm 0.010$ "  
unless otherwise specified  
Note: Detail A on Page 2

Page 1 of 2

To be completed at time of order: 22/55  
Material: ALLOY 22  
Heat: 2277-1-3164  
Specimen Orientation:  
Other:



Detail A



*Darrell Dunn* 5/22/2002  
Initiated by: D. Dunn Date

*V. Jain* 5/22/02  
Reviewed by: V. Jain Date

*B. Mabrito* 5/22/002  
QA Approval B. Mabrito Date

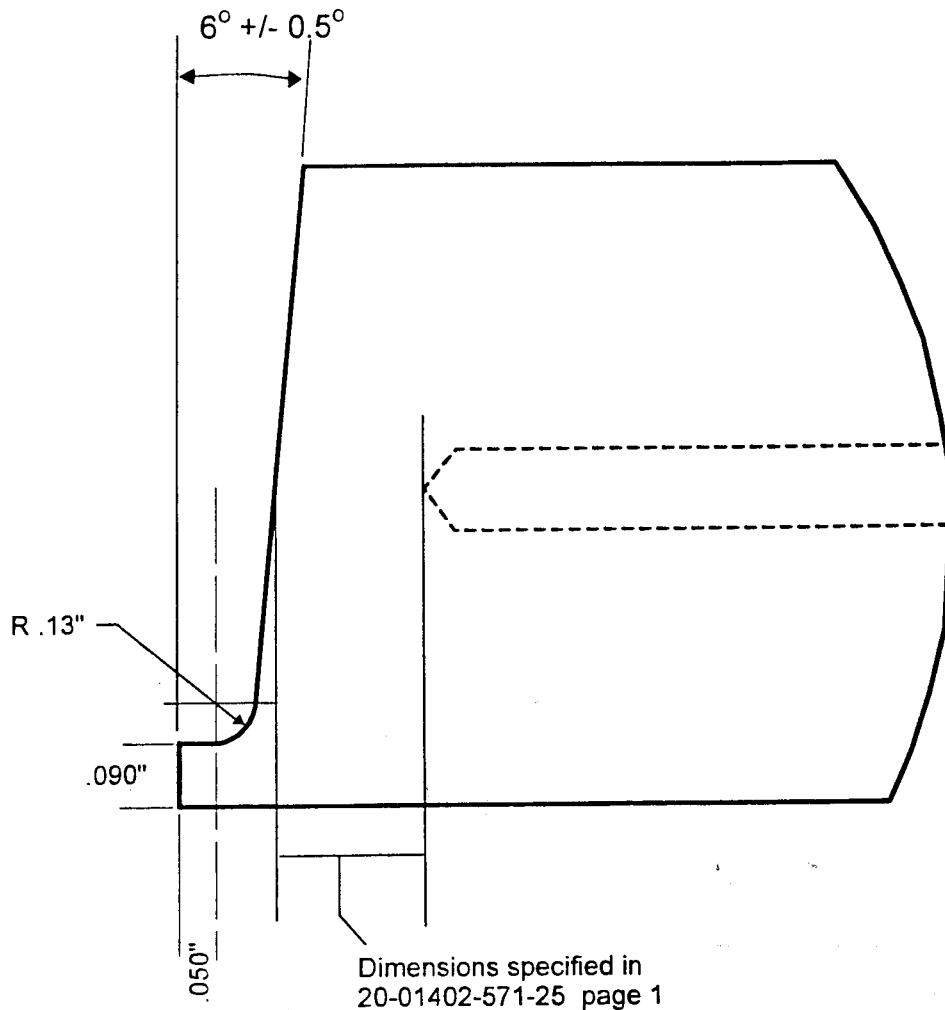
Darrell S. Dunn  
SwRI-CNWRA  
Phone: (210) 522-6090  
Fax: (210) 522-5184  
e-mail: ddunn@swri.org

Alloy 22 Weld Specimen  
CNWRA Drawing 20-01402-571-25  
All Dimensions  $\pm 0.005"$   
unless otherwise specified  
Detail A identified on Page 1

Page 2 of 2

To be completed at time of order: 23/55  
Material: ALLOY 22  
Heat: 2277-1-3164  
Specimen Orientation:  
Other:

### Detail A



Dimensions specified in  
20-01402-571-25 page 1

*Darrell Dunn* 5/22/2002  
Initiated by. D. Dunn Date

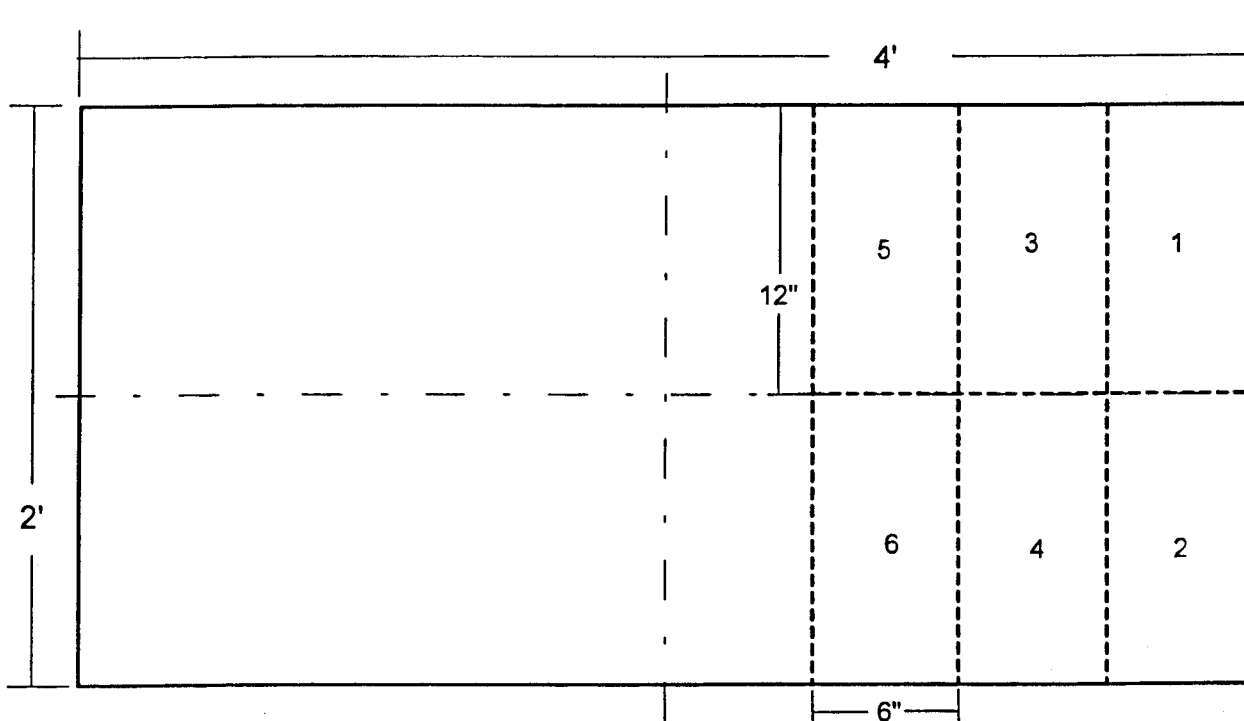
*V. Jain* 5/22/02  
Reviewed by V. Jain Date

*B. Mabrito* 5/22/2002  
QA Approval B. Mabrito Date

Darrell S. Dunn  
SwRI-CNWRA  
Phone: (210) 522-6090  
Fax: (210) 522-5184  
e-mail: ddunn@swri.org

Refer to drawing for weld procedure  
qualification specimens  
CNWRA Drawing 20-01402-571-026  
No dimensional tolerances

To completed at time of order: 24/55  
Material: Alloy 22  
Heat: 2277-1-3164  
Specimen Orientation: As Shown  
Other:



Darrell Dunn 5/22/2002  
Initiated by. D. Dunn Date

V. Jain 5/22/2002  
Reviewed by V. Jain Date

B. Mabrito 5/22/2002  
QA Approval B. Mabrito Date



25/55

**Texas Toolmakers, Inc.**

11411 E. Coker Loop / San Antonio, TX 78216

Phone: (210) 494-3651

Fax: (210) 494-6139

**CUSTOMER WORK ORDER / QUOTE**

Job No.:	Quote No.: 1650	Date Opened:	Delivery Date: 2-3 WEEKS ARO	Customer No.: 01111	Job Taken/Quoted by: MIKE RIDGWAY
Customer: SOUTHWEST RESEARCH INSTITUTE			Quote Good For: 90 DAYS	Terms: 1/2% 10 NET 30	
6220 CULEBRA			Customer P.O.:	Contact: DARRELL DUNN	
SAN ANTONIO, TEXAS 78238			Phone No.: 210-684-5111	Fax No.: 210-522-5184	

Item	Qty	Part No.	Rev	Part Name	Bid / T&M	Price Ea.	Total
1	6	20-01402-571-25		ALLOY 22 WELD SPECIMEN		749.00	\$4,494.00
							\$ 0.00
							\$ 0.00
							\$ 0.00
							\$ 0.00
							\$ 0.00
							\$ 0.00
							\$ 0.00
							\$ 0.00
							\$ 0.00
							\$ 0.00
Work Instructions:						Total	\$4,494.00

All quotations and agreements are contingent upon strikes, fires, availability of materials, and all other causes beyond our control. Prices are subject to change by seller before final acceptance

FOB: TEXAS TOOLMAKERS, INC.

Page/Sheet \_\_\_\_ of \_\_\_\_

Quality Requirements: ☐ None ☐ As noted below

Material/Process Certification: ☐ Yes ☒ No | Certificate of Compliance: ☒ Yes ☐ No | Source Inspection ☐ Yes ☒ No

Documented Dimensional Inspection: ☒ Yes ☐ No; If Yes: 1) ☐ Specified Dimensions Only, 2) ☒ Sampling, OR 3) ☐ 100%

Authorized TTI Representative:

*Mike Ridgway*

Date: 5/21/02

Customer Acceptance:

Title:

Date:

Customer Comments (if applicable):

Note: price(s) may be affected if scope of work/inspection is deviated from that quoted.

— For TTI Use Only —

Reviewed by:

Date:

P.O. provided at time of review:

☐ Yes ☐ No

26/55

11411 East Coker Loop  
San Antonio, Texas 78216  
(210) 494-3651 \* Fax (210) 494-6139  
www.texastoolmakers.com



## CERTIFICATE OF CONFORMANCE

TO: Southwest Research Institute  
6220 Culebra Road  
San Antonio, Tx. 78238-5166

CUSTOMER P.O. 286716S

TTI JOB #: 33484

DESCRIPTION 5 EA. P/N 20-01402-571-25 ALLOY 22 WELD SPECIMEN

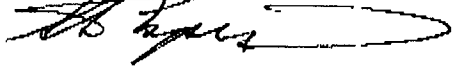
WE CERTIFY THAT THE ITEM(S) ON THE ABOVE REFERENCED PURCHASE ORDER HAVE BEEN PROCESSED AND/OR MANUFACTURED IN ACCORDANCE WITH:

Drawings

RECORDS ARE ON FILE AT THIS FACILITY, WHICH VERIFY OUR PROCESS CONTROLS, AND AVAILABLE FOR REVIEW UPON REQUEST. TEST RESULTS ARE AS FOLLOWS:

ACCEPTED

TEXAS TOOLMAKERS,

BY :  (Steven Espinoza)  
TITLE: Q.C. Inspector  
DATE: 7/16/02

27/55

Job No.: 33484	Part No.: 20-01402-571-25 S/N 001	Rev. No.: -	P.O. No.: 2867165
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Customer: SWRI	Part Name: Alloy 22 Weld Specimen	Log No.: 2163001C
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Inspection Plan:	Quantity:	Sample Size:	Accept No.:	Reject No.:	NR No.:
<input type="checkbox"/> 100 % <input checked="" type="checkbox"/> Specified Dim. <input type="checkbox"/> 1st Article	1	1	1	0	0

[illegible]

\* Recorded if not affected by tolerance block. Sheet 1 of 1

Inspection Performed by: [Signature] Date: 7/1/02 Customer (as applicable) \_\_\_\_\_ Date \_\_\_\_\_

28/55

Job No.: 33484	Part No.: 20-01402-571-25 S/N 002	Rev. No.: -	P.O. No.: 2867165
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Customer: SWRI	Part Name: Alloy 22 Weld Specimen	Log No.: 2163001C
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Inspection Plan:	Quantity:	Sample Size:	Accept No.:	Reject No.:	NR No.:
<input type="checkbox"/> 100 % <input checked="" type="checkbox"/> Specified Dim. <input type="checkbox"/> 1st Article	1	1	1	0	0

* Recorded if not affected by tolerance block.	Sheet <u>  1  </u> of <u>  1  </u>
Inspection Performed by: <u>[Signature]</u> Date: <u>7/1/02</u>	Customer (as applicable) _____ Date _____

# DIMENSIONAL INSPECTION REPORT

29/85

TEXAS TOOLMAKERS, INC.

Job No.: <b>33484</b>	Part No.: <b>20-01402-571-25</b> <b>S/N 003</b>	Rev. No.: -	P.O. No.: <b>2867165</b>
Customer: <b>SWRI</b>		Part Name: <b>Alloy 22 Weld Specimen</b>	
		Log No.: <b>2163001C</b>	

Inspection Plan: <input type="checkbox"/> 100 % <input checked="" type="checkbox"/> Specified Dim.	Quantity: <b>1</b>	Sample Size: <b>1</b>	Accept No.: <b>1</b>	Reject No.: <input checked="" type="checkbox"/>	NR No.: <input checked="" type="checkbox"/>
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Zone	Dim. / Char.	Tolerance*	Actual	Equipment S/N	Comments
1	6°	± .5°	6°	TII 085+081	
2	R .13		R .130	TII 024	
3	.090		.090	TII 102	
4	.050		.050	TII 102	
5	6.00		6.009-6.014	TII 083	
6	3.00	± .03	3.00	TII 081	
7	.250		.260	TII 083	
8	12.00	± .06	12.013	TII 083	
9	3.00		3.00	TII 102	
* 10	.500	.510	.510	TII 083	
11	4.25		4.248	TII 102	
12	4.25		4.249	TII 102	
13	.50		.500	TII 102	
14	.128	± .002	.128	TII 102	2 pl.
15	<u>1.00</u>		<u>1.044</u>	TII 102	
16	.250				2 pl.
	↑				
	MISSING DIMENSION.				

* Recorded if not affected by tolerance block.			Sheet <u>1</u> of <u>1</u>	
Inspection Performed by:	Date: <u>7/8/02</u>	Customer (as applicable):	Date:	

30/55


Job No.: 33484	Part No.: 20-01402-571-25 S/N 004	Rev. No.: -	P.O. No.: 2867165
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Customer: SWRI	Part Name: Alloy 22 Weld Specimen	Log No.: 2163001C
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Inspection Plan: <input type="checkbox"/> 100 % <input checked="" type="checkbox"/> Specified Dim. <input type="checkbox"/> 1st Article	Quantity: 1	Sample Size: 1	Accept No.: 1	Reject No.: 0	NR No.: 0
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Sheet / of /

 Inspection Performed by:	7/1/02 Date	_____ Customer (as applicable)	_____ Date
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31/55

31/55

Job No.: 33484	Part No.: 20-01402-571-25 S/N 005	Rev. No.: -	P.O. No.: 2867165
Customer: SWRI	Part Name: Alloy 22 weld Specimen		Log No.: 2163001C

Inspection Plan:	Quantity:	Sample Size:	Accept No.:	Reject No.:	NR No.:
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[illegible]

Sheet / of /

Date \_\_\_\_\_

Date \_\_\_\_\_

32/55

Job No.: 33484	Part No.: 20-01402-571-25 S/N 006	Rev. No.: -	P.O. No.: 2867165
Customer: SWRI	Part Name: Alloy 22 Weld Specimen	Log No.: 2163001C	

Inspection Plan:	Quantity:	Sample Size:	Accept No.:	Reject No.:	NR No.:
<input type="checkbox"/> 100 % <input checked="" type="checkbox"/> Specified Dim. <input type="checkbox"/> 1st Article	1	1	0	1	0

[illegible]

Sheet / of /

Date \_\_\_\_\_



# CENTER FOR NUCLEAR WASTE REGULATORY ANALYSES

33/55

## MEMORANDUM

August 30, 2002

**TO:** Nonconformance Report (NCR) 2002-08 File

**FROM:** Bruce Mabrito, Director of CNWRA QA



**SUBJECT:** Status/Extension on NCR 2002-08

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This memorandum to the NCR 2002-08 file is an explanation of the progress to date on closing out this NCR and provides for an extension in the target dates for completion.

NCR 2002-08 describes Alloy 22 specimen preparation shortcomings to be used in the CNWRA weld qualification process.

The subject target date for completion of NCR 2002-08 was first extended to August 31, 2002. Item No. 3 on this NCR will have to be further extended until a decision is reached on whether specimen SN 006 is going to be utilized in the CNWRA process. If used, further repair and machining is required.

Item No. 2 on the NCR, examination of a 0.250-inch hole, has been performed and is acceptable. Item No. 1, drawing revision has not been performed but is not a quality-affecting hold point for close out of NCR 2002-08.

Based on this information and the currently anticipated activity in the CNWRA, I am extending the formal target date for completion of NCR 2002-08 to September 13, 2002.

cc: B. Mabrito  
D. Dunn  
M. Ehnstrom/30  
T. Mayces/30  
M. Padilla/CNWRA QA



# WELD JOINT FABRICAT. N RECORD

Weld Joint No. N/A

Dwg. No. 20-01402-571-25 Rev 1

Fab. Oper. Record Seq. No. N/A

Project No. I 20-06002

Wps No. C22-GTAW

Base Plate A: Material SB-575

Base Plate B: Material N/A

Thickness 1"

Thickness N/A

MRI No. No. 6

MRI No. N/A

Filler Metal: Type

Size

Root ERNiCRMo-10

Root 3/32"

Fill ERNiCRMo-10

Fill 3/32"

Flux N/A

SwRI Lot No. Root N/A

Joint Design Modified Single U

Fill

Flux

Fit-Up: Accepted By N/A

Date:

Welder	Shift	Stamp Number	Date

## Inspections: (Circle As Required)

Root: MT: PT: VT: Accepted By

Date

Final: MT: PT: VT: Accepted By

Date

UT: RT: Accepted By

Date

Repair No.	Location	Type	Depth	Welder	Date	Inspected Acc	Rej	Remarks
1	See Drawing	U Groove	1.390	FRANK GARCIA	11-25-02	X		Accepted by JM Casanova
								See Drawing for weld joint repair detail.

Comments Repair of Alloy 22 Weld Test Specimen No 6, NR No MCR 2002-08.

Vendor had drilled thru macouple hole thru plate into weld groove. Ground bevel weld prep in weld groove. Checked weld cavity depth, peened and welded repair area using WPS C22-GTAW.

Darrell S. Dunn  
SwRI-CNWRA  
Phone: (210) 522-6090  
Fax: (210) 522-5184  
e-mail: ddunn@swri.org

Alloy 22 V 1 Specimen  
CNWRA Drawing 20-01402-571-25 Rev. 01  
All Dimensions  $\pm 0.010"$   
unless otherwise specified  
Note: Detail A on Page 2

Page 1 of 2

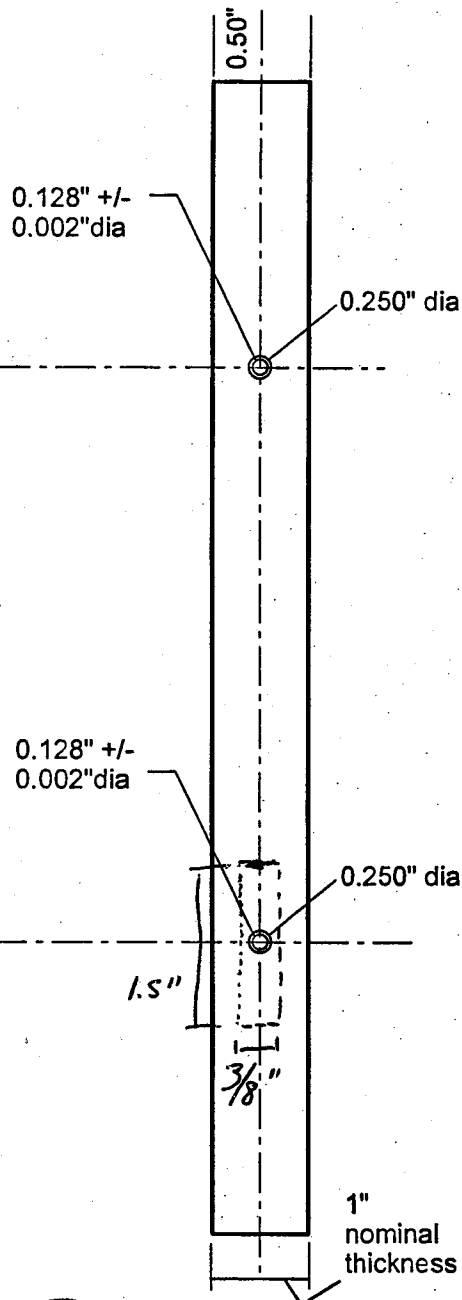
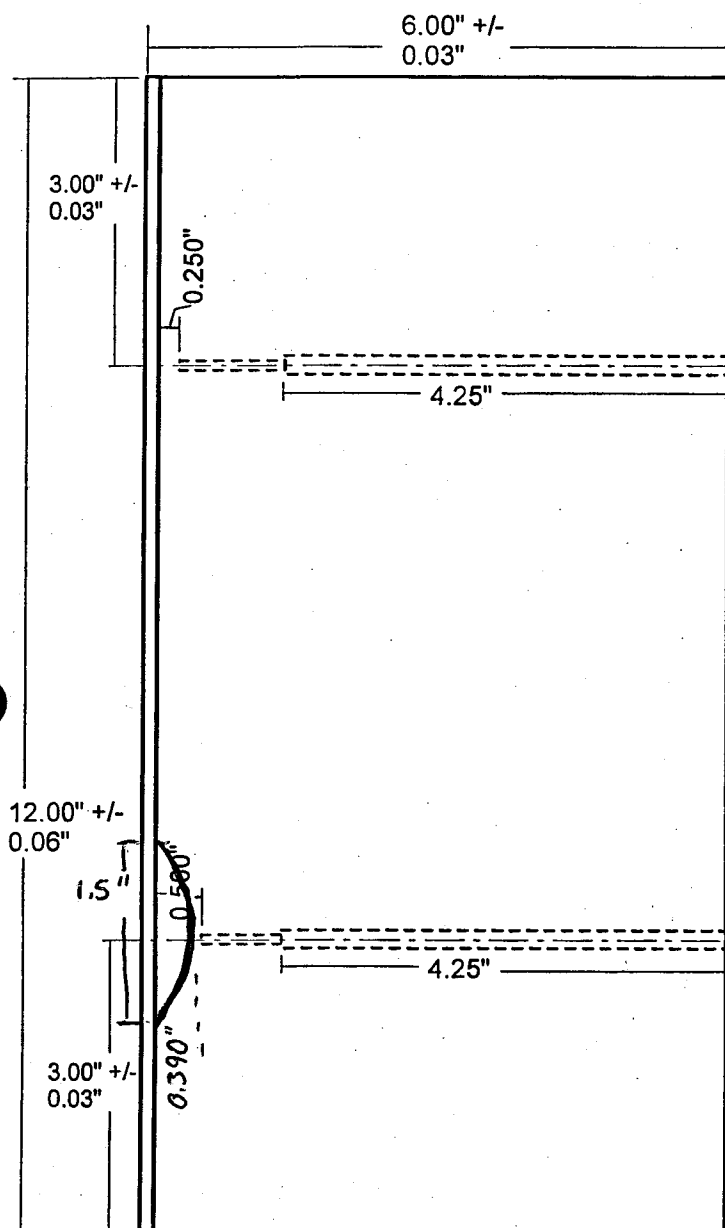
To be completed at time of order:

Material: \_\_\_\_\_

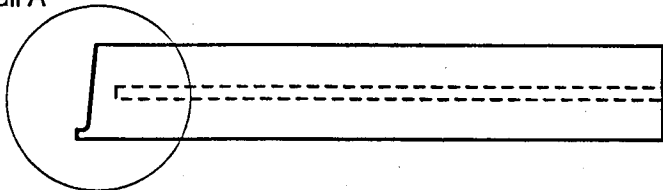
Heat: \_\_\_\_\_

Specimen Orientation: \_\_\_\_\_

Other: \_\_\_\_\_



Detail A



*Darrell Dunn* 9/4/2002  
Initiated by: D. Dunn Date

*V. Jain* 9/10/02  
Reviewed by: V. Jain Date

*B. Mabrito* 9/10/2002  
QA Approval B. Mabrito Date

Darrell S. Dunn  
SwRI-CNWRA  
Phone: (210) 522-6090  
Fax: (210) 522-5184  
e-mail: ddunn@swri.org

Alloy 22 Weld Specimen  
CNWF Drawing 20-01402-571-25 Rev. 01  
All Dimensions  $\pm 0.005$ "  
unless otherwise specified  
Detail A identified on Page 1

Page 2 of 2

To be completed at time of order:

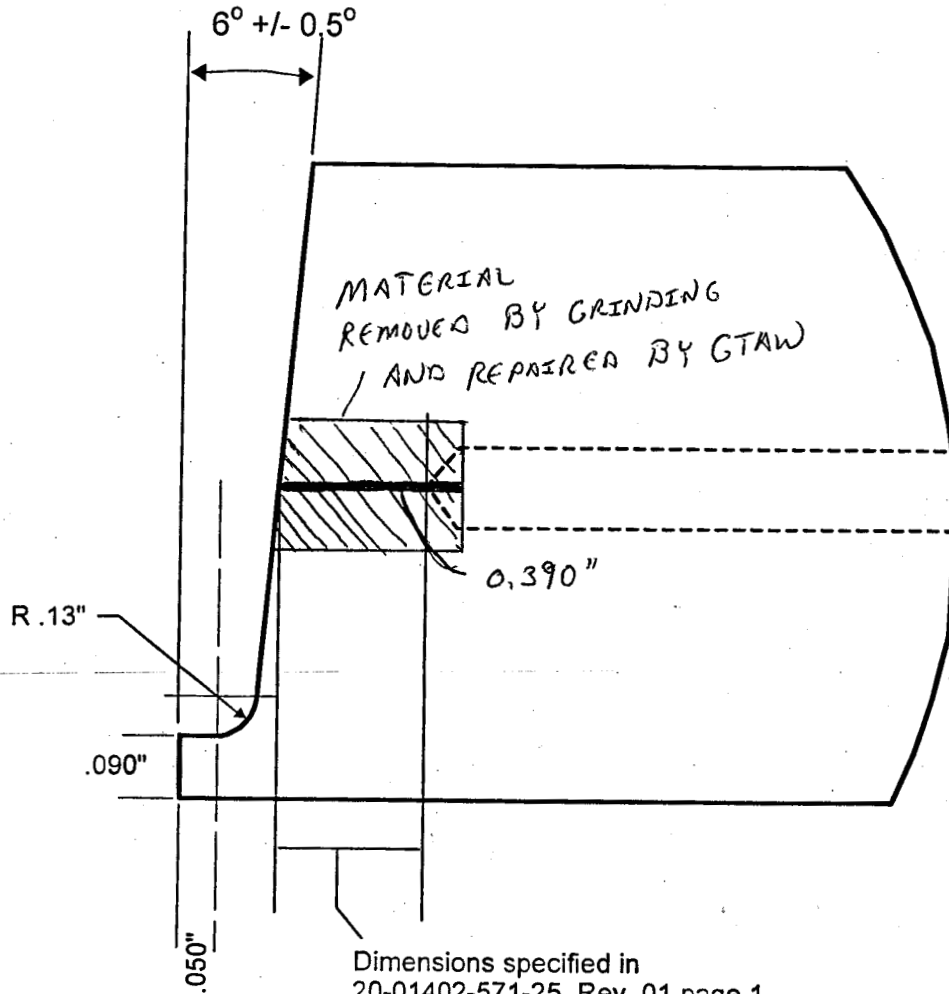
Material: \_\_\_\_\_

Heat: \_\_\_\_\_

Specimen Orientation: \_\_\_\_\_

Other: \_\_\_\_\_

Detail A



*Darrell Dunn* 9/4/2002  
Initiated by: D. Dunn Date

*V. Jain* 9/10/02  
Reviewed by: V. Jain Date

*B. Mabrito* 9/10/2002  
QA Approval B. Mabrito Date