
OPTICAL BAFFLE PROCUREMENT

MARCH 26, 1996

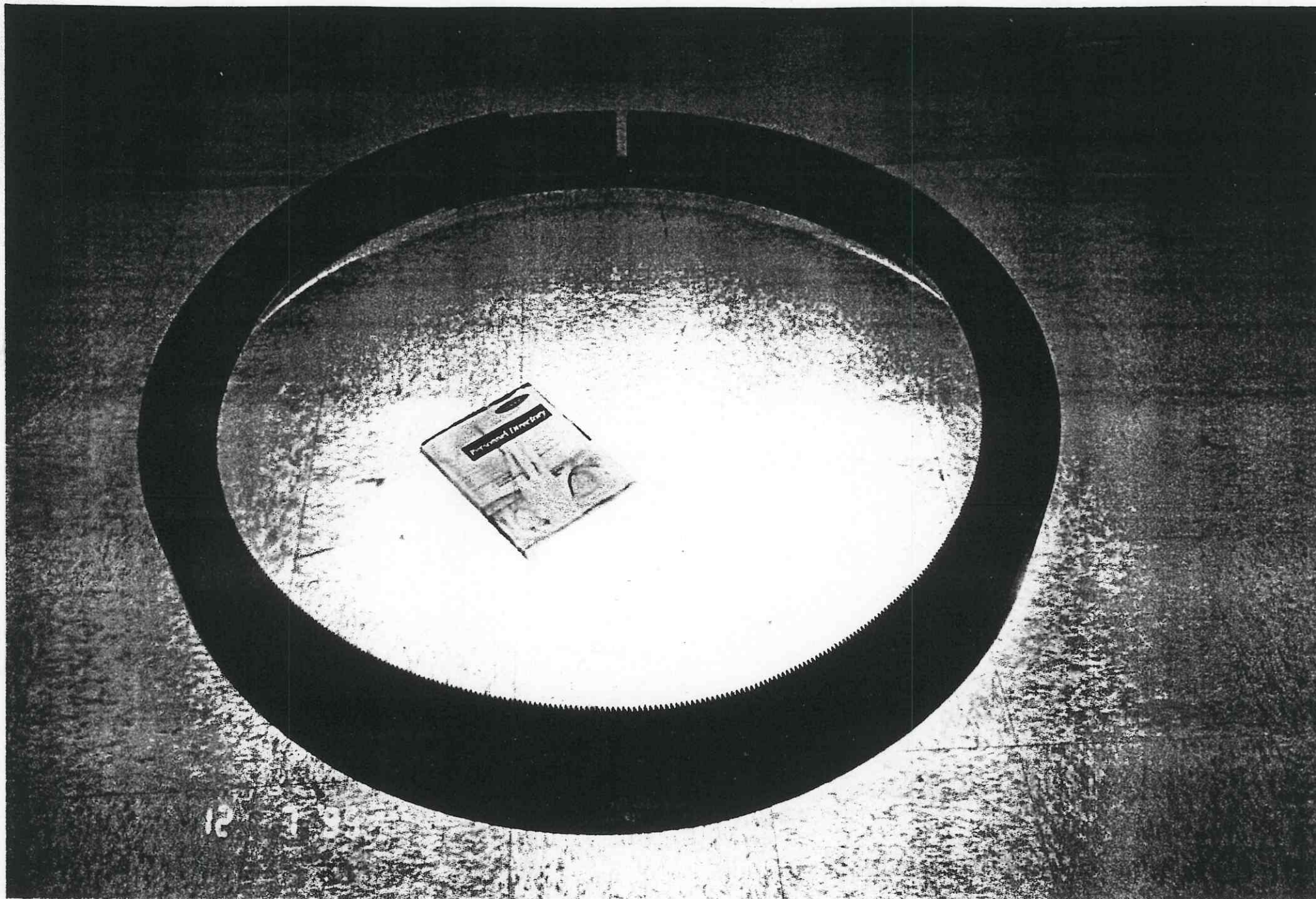
GERHARD STAPFER

NEED FOR BAFFLE

- CONTROL STRAY LIGHT
 - REFLECT SHALLOW ANGLE BEAMS
- REDUCE SCATTERED LIGHT FROM REACHING PHOTO DETECTORS
 - LENGTH SENSING SUBSYSTEM
- PREVENT STRAY LIGHT FROM REACHING THE TEST MASS
 - REDUCES POTENTIAL PHASE NOISE

BAFFLE ASSEMBLY

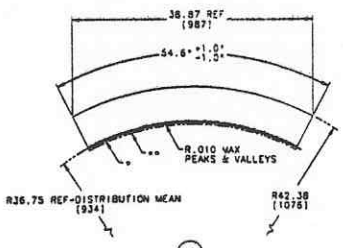
- **TWO TYPES OF BAFFLES ARE REQUIRED**
 - FULLY SERRATED
 - NON SERRATED
- **NUMBER OF BAFFLES NEEDED**
 - 852 FULLY SERRATED BAFFLES
 - 126 NON SERRATED BAFFLES (NEEDED FOR HANFORD ONLY)
- **LOCATION OF BAFFLES**
 - BAFFLES ARE LOCATED ALONG THE FULL LENGTH OF THE BEAM TUBE
 - BAFFLES ARE NOT SPACED EVENLY, BUT ARE TIGHTLY BUNCHED NEAR THE CORNER AND END STATIONS



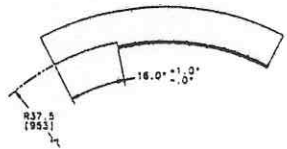
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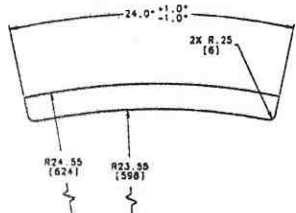
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-1
3 REQ'D.



-2 SAME AS -1 EXCEPT AS NOTED
1 REQ'D.



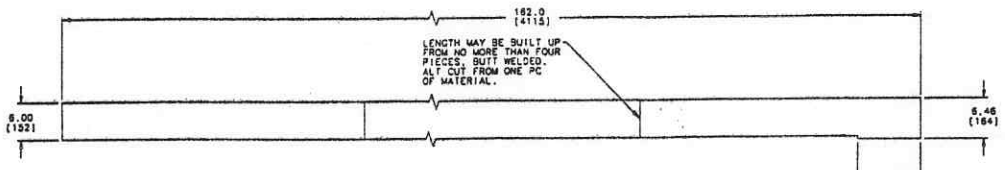
TAB
2 REQ'D.

* ACTUAL DIMS WILL BE PROVIDED TO VENDOR IN ELECTRONIC FORM, AutoCad R12 IGES FILE; BAFFLES.igs
** MATERIAL ENVELOPE (R36.32 (922.51)).

CONE SEGMENTS

MATERIAL: 304L STAINLESS STEEL
THICKNESS: 20ga (.036 NOM)
CONE SEGMENTS TO BE CUT BY WATERJET OR LASER PROCESS.
ALT METHOD TWO SECTIONS 109.2" EACH.

MATERIAL: 304L STAINLESS STEEL
THICKNESS: 20ga (.036 NOM)
NO OVER SPRAY ON THIS PART

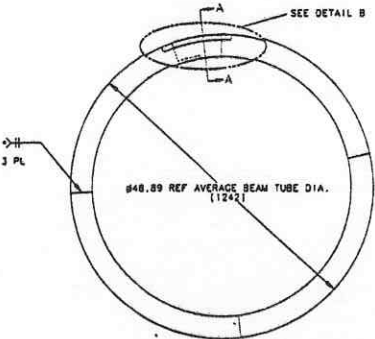


BAND

1 REQ'D.
MATERIAL: 304L STAINLESS STEEL
THICKNESS: 20ga (.036 NOM)

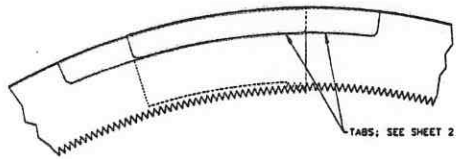
LINEAR TOLERANCES, UNLESS OTHERWISE NOTED:
X.XXX: ± 0.003
X.XX: ± 0.03
X.X: ± 0.1
ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED.

PROJECT	LIGCO PROJECT
REV	
DESCRIPTION	
DATE	
BY	
CHECKED	
APPROVED	



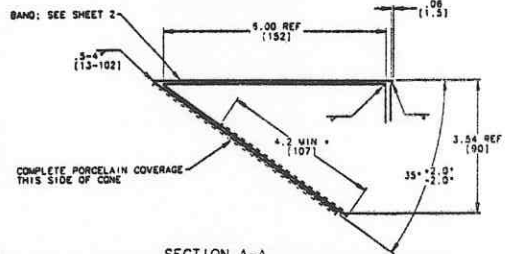
BAFFLE ASSEMBLY

* TOP SURFACE OF CONE SEGMENT BUTT JOINTS TO BE FREE OF WELD MELT-THROUGH; EDGE MISMATCH NOT TO EXCEED .010 (.25) AT SERRATIONS.
ALT 2 RATHER THAN 4 SEGMENTS.



DETAIL B

DRAWN INSTALLED IN MAXIMUM DIAMETER OF BEAM TUBE (#49.17)
7.3 OVERLAP AT BAND



SECTION A-A

(CURVATURE IGNORED FOR SIMPLICITY)
* PORCELAIN COVERAGE THIS SIDE OF CONE

LINEAR TOLERANCES, UNLESS OTHERWISE NOTED:
X.XXX: ± 0.003
X.XX: ± 0.03
X.X: ± 0.1
ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED.

PROJECT	LIGCO PROJECT
REV	
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APPROVED	

BAFFLE INSTALLATION

- THE BAFFLES ARE INSTALLED DURING THE BEAM TUBE INSTALLATION PHASE
- THE INSTALLATION IS THE FINAL OPERATION FOR EACH BEAM TUBE SECTION
- THE BEAM TUBE CONTRACTOR (CBI) WILL DO THE BAFFLE INSTALLATION
- THE INSTALLATION COST IS INCLUDED IN THE BEAM TUBE CONTRACT

BAFFLE DEVELOPMENT

- THE BAFFLE DESIGN AND FABRICATION WAS INITIALLY PART OF THE BEAM TUBE SCOPE
 - BAFFLE DESIGN BY CBI DID NOT MEET THE REVISED LIGO REQUIREMENTS
- TO ALLOW FOR DESIGN AND OPTICAL COATING OPTIMIZATION AND EVALUATION, THE TASK WAS REMOVED FROM THE THE BEAM TUBE SCOPE
- THE COMPLETED COATED BAFFLE ASSEMBLIES ARE DELIVERED TO CBI BY LIGO (GFE)

ACQUISITION APPROACH

- **VALIDATE THE DESIGN THROUGH PROTOTYPE TESTING**
 - SEVERAL PROTOTYPE DESIGNS HAVE BEEN FABRICATED AND TESTED BY LIGO; FINAL DESIGN HAS BEEN RELEASED
- **PROVIDE COMPETITIVE COST BASIS**
 - ISSUED RFP
 - RECEIVED FOUR PROPOSALS
- **ASSURE AVAILABILITY WHEN NEEDED**
 - DEVELOP ALTERNATE SOURCE

PROCUREMENT STATUS

- ISSUED RFP
 - SEPARATE COST FOR QUANTITIES AND BAFFLE TYPES
 - PROPOSED DELIVERY SCHEDULE
- RECEIVED PROPOSALS
 - RECEIVED FOUR PROPOSALS
 - THREE PROPOSALS WERE JUDGED RESPONSIVE
- EVALUATED PROPOSALS
 - QUALIFICATION
 - UNIT COST
 - TOTAL COST
 - DELIVERY

QUALIFICATION ANALYSIS

- **VENDOR QUALIFICATION**

- CAPITAL INDUSTRIES
 - ACCEPTABLE D&B
 - QUALIFIED PRODUCTION FACILITIES (BASED ON VISIT)
- LASER INDUSTRIES INC..
 - UNACCEPTABLE D&B (IRS AND COUNTY TAX LIENS)
- MEYER TOOL INC..
 - ACCEPTABLE D&B
 - QUALIFIED PRODUCTION FACILITIES (BASED ON PRIOR PERFORMANCE FOR CBI)

COST ANALYSIS

- **COMPARISON WITH LIGO ESTIMATE**

- LIGO COST BOOK \$ 322K
- CAPITAL INDUSTRIES INC.. \$ 320 K
- MEYER TOOL INC.. \$ 444 K

- **POTENTIAL COST EXPOSURE**

- THE COST OF DELAYING CBI IF THE BAFFLES ARE NOT AVAILABLE AT THE TIME OF INSTALLATION, IS ESTIMATED BETWEEN \$ 200 K AND \$ 300 K PER WEEK

- **COST OF DEVELOPING SECOND SOURCE**

- NO SECOND SOURCE \$ 320 K
- PROPOSED SPLIT ORDER 85%-15% \$ 348.3 K
- ADDED COST FOR SECOND SOURCE \$ 28.3 K

PROPOSED PROCUREMENT

- MAINTAIN TWO QUALIFIED VENDORS TO MITIGATE COST AND SCHEDULE EXPOSURE
- SELECT CAPITAL INDUSTRIES INC.. TO PROVIDE THE BULK OF THE ORDER (>85%)
 - 65 NON-SERRATED
 - 755 SERRATED
- SELECT MEYER TOOL INC.. AS AN ALTERNATE SOURCE TO FABRICATE THE REMAINING BAFFLES (<15%)
 - 65 NON-SERRATED
 - 115 SERRATED