

UNCLASSIFIED

AD 261 676

*Reproduced
by the*

ARMED SERVICES TECHNICAL INFORMATION AGENCY
ARLINGTON HALL STATION
ARLINGTON 12, VIRGINIA



UNCLASSIFIED

NOTICE: When government or other drawings, specifications or other data are used for any purpose other than in connection with a definitely related government procurement operation, the U. S. Government thereby incurs no responsibility, nor any obligation whatsoever; and the fact that the Government may have formulated, furnished, or in any way supplied the said drawings, specifications, or other data is not to be regarded by implication or otherwise as in any manner licensing the holder or any other person or corporation, or conveying any rights or permission to manufacture, use or sell any patented invention that may in any way be related thereto.

CATALOGED BY ASTIA 261673
AS AD No.

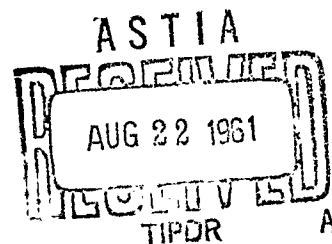
INDUSTRIAL ENGINEERING DIVISION

Lake City Arsenal

PRODUCT ENGINEERING DESIGN STUDY OF

CARTRIDGE, 37MM, SPOTTING, XM415

I. E. D. REPORT NR.61-12



PROJECT: 56-32 4010.15.0106.1.01.62

JULY 1961

XEROX

**Best
Available
Copy**

INDUSTRIAL ENGINEERING DIVISION
LAKE CITY ARSENAL
INDEPENDENCE, MISSOURI

PRODUCT ENGINEERING DESIGN STUDY OF
CARTRIDGE, 37MM, SPOTTING, XM415

Industrial Engineering Report
61-12

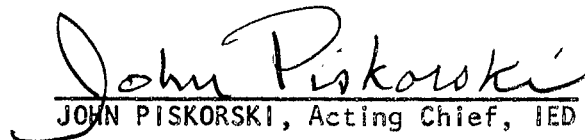
Project Number:
4010.15.0106.1.01.62

JULY 1961

Prepared by:


FRANK W. LITTLEFORD

Approved by:


JOHN PISKORSKI, Acting Chief, IED


GEORGE E. RUPPEL

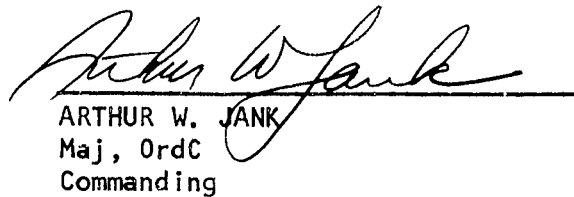

ARTHUR W. JANK
Maj, OrdC
Commanding

TABLE OF CONTENTS

	<u>Page</u>
I. ABSTRACT	1
II. INTRODUCTION	2
III. PROCEDURE	4
IV. RESULTS OF STUDY	4
V. CONCLUSIONS	9
VI. RECOMMENDATIONS	9
VII. APPENDICES	
A. Sketches	
B. References	
C. Distribution List	

1. ABSTRACT:

This report covers the Industrial Engineering Division, Lake City Arsenal, product engineering design study of Cartridge, 37mm, spotting, XM415, which is a sub-caliber component of the XM29 Weapons System. Experience gained at Lake City Arsenal in the production engineering and initial manufacturing phase of Cartridge, 20mm, spotting, XM101, was fully utilized and applied. Altogether some twenty-one (21) completely dimensioned and annotated component drawings were generated, but no actual metal parts were made or tested.

The modified cartridge case is similar in basic design to the 20mm XM154. Two case plugs of different internal volume fit the case body to provide the two ranges required of the spotter round. The case wall thickness is the minimum which will safely withstand anticipated excess chamber pressure requirements without additional heat-treatment.

The projectile was simplified and improved by changing to a conventional one-piece body with a male threaded fuze intruding into the mouth. The external configuration closely resembles the XM101 projectile but for size; weight and c.g. are unchanged from the Picatinny Arsenal XM415 projectile. Several internal changes were made for simplification of manufacture, assembly, or both, and several

components were eliminated thereby. The counterweight was changed from lead to D-38 which was a major factor in the increase of the payload by 23% over the Picatinny Arsenal projectile.

No assembly drawings other than a sectioned layout were generated during this project, and if desired, will require additional funding.

A study to modify the T336E7 fuze to the XM415 projectile is in progress and will be reported separately.

The subject study was completed in time that changes can be incorporated by Picatinny Arsenal into the R&D and ET-UT quantities if desired.

II. INTRODUCTION:

Because of the experience gained by the Industrial Engineering Division, Lake City Arsenal, in the production engineering and initial production phase of the Cartridge, 20mm, spotting, XM101, this arsenal was funded by Picatinny Arsenal, ORDBB-TW4, to conduct a production engineering design study of the subject cartridge, and supply Picatinny Arsenal with a set of engineering drawings.

The function of the XM415 cartridge is to provide spotting (i.e., direct range determination) information for the XM29 Weapons System. To accomplish this a "Dial-the-Zone" cartridge case was originally designed by Picatinny Arsenal to cover the two ranges of

the major weapon. However, by the time IED began the subject engineering study this "dual-zone" case had been dropped in favor of two separate cartridges, one for each zone.

The XM415 projectile differs from the XM101 in that the spotting mix is ejected rearward and upward, thereby substantially increasing the probability of visual observation under all conditions of weather and terrain. The rear ogive of the XM415 projectile body is opened by a small PETN charge in the front of the tail boom.

After completion of this study, drawings were received from Picatinny Arsenal showing a cartridge case (Drawing AA-44-1666) similar in external configuration to the LCA case generated in this study. The wall section is much thinner and heat-treatment is required for the necessary strength. A case mouth anneal is not indicated. Two case plugs, metering disc and metering disc cover incorporating LCA redesign features, were then made up for the PA case, theorizing that the gun chamber configuration may have been frozen.

Experience with the XM154 case and similar items indicates that warpage caused by heat-treating will substantially increase the inspection rejection rate. The PA case (Drawing AA-44-1666) is 1.6" longer than the LCA case which increases material cost by 15%, plus the alloy costs. The taper of the PA case is substantially less than the LCA design, and increased extraction problems are anticipated thereby.

III. PROCEDURE:

All Picatinny Arsenal component and assembly drawings were studied in detail as to materials used, methods of manufacture required, functioning of each item and assembly, special assembly and inspection techniques required, and general over-all practicality.

During the entire study and subsequent redesign, parameters established by Picatinny Arsenal were closely adhered to.

No actual components were fabricated, the entire operation being a paper study.

Completed component drawings were delivered to Picatinny Arsenal, Messrs. E. Roof and D. Trevarrow, on 13 July 1961, and the various recommended changes from the Picatinny Arsenal design thoroughly discussed.

IV. RESULTS OF STUDY:

A brief resume of changes made, with reasons, to the major components follows:

a. Case Body, Drawing LCA-SK-423

<u>Change</u>	<u>Reason</u>
Increased taper	Better extraction
Standard threading	Lower tooling cost
No heat-treatment	Lower processing cost and rejection rate
Carbon steel	Lower material cost
Reduced over-all length	Material & machining costs reduced
Rimless configuration used	Savings in material and processing realized.

b. Case Plug, Drawing LCA-SK-421 (long range)
LCA-SK-422 (short range)

<u>Change</u>	<u>Reason</u>
Igniter tube eliminated	Improved ignition and decreased velocity dispersion at less cost.
Carbon steel	Lower cost
No heat-treatment	Lower processing cost & rejection rate.
Firing Plug (Dwg. 74-2-78M) eliminated	Firing pin impinges directly on primer. Less cost & more positive action.
Four (4) torque holes are used on the long range plug, two (2) only on the short range plug.	Positive night identification
Counterbore removed from torque hole	Simplified tooling & lower cost.

c. Metering Disc, Drawing LCA-SK-424

<u>Change</u>	<u>Reason</u>
Single size & same number of holes	Reduced tooling & production costs
No trepanning	Lower costs
Fool-proof assembly	Same disc used for both ranges, no chance of mistake in loading.

d. Metering Disc Cover, Drawing LCA-SK-420

<u>Change</u>	<u>Reason</u>
Thickness increased to .005 from .003 used by Picatinny Arsenal	Improve ignition
One cover for both ranges	Simplify production & loading, and reduce costs.

e. Projectile Body, Drawing LCA-SK-446

<u>Change</u>	<u>Reason</u>
Eliminate threaded juncture in center of body	Concentricity requirements cannot be maintained in production. Adapter (PA Dwg. AA-44-1554) eliminated. Improved body security. Improve interior ballistics as body O.D. can be held to closer limits. Improve exterior ballistics as the thread concentricity problem is eliminated.
Moved obturating band rearward	Reduces length of case as projectile intrusion is less. Material and machining costs reduced thereby.
Changed material of the counterweight (P.A. "insert") LCA-SK-443	The volume saved thereby is added to the payload, increasing it by some 23%.
Visual effectiveness increased Payload Volume: P.A.: 1.567 cu. in. L.C.A.: 1.919 cu. in.	The increased volume (23%) of spotting mix will substantially increase the display. Observation of the projectile under adverse weather and terrain conditions, and in the Arctic, should be greatly improved.
Band seat configuration	A conventional double-undercut band seat was added to assure band security. Obturation is achieved by interference rather than by gas pressure as on the PA projectile. It is believed the PA band will come off causing external ballistic problems.
Band material	Teflon instead of geon is shown as the banding material. Experience with geon in the XM101 program indicates that it scuffs off easily in the barrel and is a cause of velocity dispersion. If teflon is unacceptable, a 10/1 Pb/Sn alloy band is recommended.
Body material	Changed to C-1030-40 steel rather than a "resulphurized" grade, which is subject to seams; causing security problems when fired.

<u>Change</u>	<u>Reason</u>
Simplified charging and loading	Encapsulation of ejection charge eliminated. The black powder is directly loaded into the body during projectile charging & assembly sequence. Ejection charge volume is the same as on the PA projectile and is placed within a steel sleeve which also acts as a support for the counterweight.
External configuration	Much the same as the current XM101 projectile, which closely matches the exterior ballistics of the major round. This configuration also contributes toward increased "payload".
External scoring	Removed internal score marks from critical thread area. Simplified machining.

f. Igniter Tube, Drawing LCA-SK-445

<u>Change</u>	<u>Reason</u>
Simplified configuration THE ORIGINAL DOCUMENT WAS OF POOR QUALITY. BEST POSSIBLE REPRODUCTION FROM COPY FURNISHED ASTIA. /	The rear portion of the tube is flanged outward so it will seat on a shoulder in the tail boom (LCA-SK-444). This eliminates one part (PA AA-44-1250) and a silver soldering operation.
Threads eliminated	As the igniter tube is self-supporting, the retaining nut at front of igniter tube is unnecessary. The counterweight in the counterweight is also eliminated.

g. Tail Boom

<u>Change</u>	<u>Reason</u>
Thread pitch to 24/in	Increased strength
External configuration	Changed to conform to rear of projectile body. This will also permit easier entrance of air into fins.

<u>Change</u>	<u>Reason</u>
Direct charge PETN	Eliminate separate cup and disc, thereby lowering cost by elimination of these parts.
Drill point in PETN cavity	Facilitates production and eases inspection.
Front end configuration	A crimp type configuration was added to the front end to hold igniter tube and facilitate automatic remote handling during assembly operations. Security of boom and igniter tube assembly is increased.

h. Tail, Drawing LCA-SK-447

<u>Change</u>	<u>Reason</u>
Leading edge radius	Change to a "V" edge to facilitate production and inspection.
Leading edge sweepback	Leading edge tilted back 30° to enhance aerodynamics.
Thread pitch to 24/in	Increased strength
Reduced over-all diameter	To minimize concentricity tolerance build up.
* 6 - Fin	Data indicated 6-fin type superior to 4 fins in availability of area to prevent side-draft or yaw.
* Fin caps	Caps act similar to a shroud without as great drag.

- * These changes permitted shortening of fin length thus decreasing cost of expensive extruded material, but will require a length of boom as per LCA-SK-444. Should 4-fin tail (LCA-SK-451) be adopted, boom will need be as per LCA-SK-439.

V. CONCLUSIONS:

It is believed that changes developed by the subject production engineering design study will improve the ballistic reliability and producibility of Cartridge, 37mm, spotting, XM415, without significant change in the required military characteristics, and this at a substantially lesser cost per round.

VI. RECOMMENDATIONS:

It is recommended that:

- a. A small test quantity of the LCA modified Cartridge, 37mm, spotting, XM415 be manufactured for comparative ballistic test at APG.
- b. Funds remaining on this project be expended on a study toward modifying the T336 fuze for use with the subject cartridge.

THE ORIGINAL DOCUMENT WAS OF POOR
QUALITY. BEST POSSIBLE REPRODUCTION
FROM COPY FURNISHED ASTIA

VII. APPENDIX A.

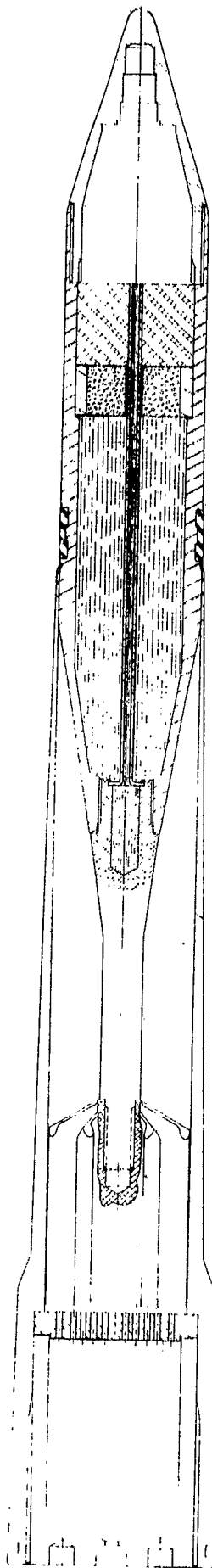
Sketches

LCA-SK-419 through LCA-SK-428

LCA-SK-439 through LCA-SK-451

Unnumbered Sketch (Assembly)

AA-44-1666



1913
1914
1915
1916
1917
1918
1919
1920
1921
1922
1923
1924
1925
1926
1927
1928
1929
1930
1931
1932
1933
1934
1935
1936
1937
1938
1939
1940
1941
1942
1943
1944
1945
1946
1947
1948
1949
1950
1951
1952
1953
1954
1955
1956
1957
1958
1959
1960
1961
1962
1963
1964
1965
1966
1967
1968
1969
1970
1971
1972
1973
1974
1975
1976
1977
1978
1979
1980
1981
1982
1983
1984
1985
1986
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
2035
2036
2037
2038
2039
2040
2041
2042
2043
2044
2045
2046
2047
2048
2049
2050
2051
2052
2053
2054
2055
2056
2057
2058
2059
2060
2061
2062
2063
2064
2065
2066
2067
2068
2069
2070
2071
2072
2073
2074
2075
2076
2077
2078
2079
2080
2081
2082
2083
2084
2085
2086
2087
2088
2089
2090
2091
2092
2093
2094
2095
2096
2097
2098
2099
2100
2101
2102
2103
2104
2105
2106
2107
2108
2109
2110
2111
2112
2113
2114
2115
2116
2117
2118
2119
2120
2121
2122
2123
2124
2125
2126
2127
2128
2129
2130
2131
2132
2133
2134
2135
2136
2137
2138
2139
2140
2141
2142
2143
2144
2145
2146
2147
2148
2149
2150
2151
2152
2153
2154
2155
2156
2157
2158
2159
2160
2161
2162
2163
2164
2165
2166
2167
2168
2169
2170
2171
2172
2173
2174
2175
2176
2177
2178
2179
2180
2181
2182
2183
2184
2185
2186
2187
2188
2189
2190
2191
2192
2193
2194
2195
2196
2197
2198
2199
2200
2201
2202
2203
2204
2205
2206
2207
2208
2209
2210
2211
2212
2213
2214
2215
2216
2217
2218
2219
2220
2221
2222
2223
2224
2225
2226
2227
2228
2229
2230
2231
2232
2233
2234
2235
2236
2237
2238
2239
2240
2241
2242
2243
2244
2245
2246
2247
2248
2249
2250
2251
2252
2253
2254
2255
2256
2257
2258
2259
2260
2261
2262
2263
2264
2265
2266
2267
2268
2269
2270
2271
2272
2273
2274
2275
2276
2277
2278
2279
2280
2281
2282
2283
2284
2285
2286
2287
2288
2289
2290
2291
2292
2293
2294
2295
2296
2297
2298
2299
2300
2301
2302
2303
2304
2305
2306
2307
2308
2309
2310
2311
2312
2313
2314
2315
2316
2317
2318
2319
2320
2321
2322
2323
2324
2325
2326
2327
2328
2329
2330
2331
2332
2333
2334
2335
2336
2337
2338
2339
2340
2341
2342
2343
2344
2345
2346
2347
2348
2349
2350
2351
2352
2353
2354
2355
2356
2357
2358
2359
2360
2361
2362
2363
2364
2365
2366
2367
2368
2369
2370
2371
2372
2373
2374
2375
2376
2377
2378
2379
2380
2381
2382
2383
2384
2385
2386
2387
2388
2389
2390
2391
2392
2393
2394
2395
2396
2397
2398
2399
2400
2401
2402
2403
2404
2405
2406
2407
2408
2409
2410
2411
2412
2413
2414
2415
2416
2417
2418
2419
2420
2421
2422
2423
2424
2425
2426
2427
2428
2429
2430
2431
2432
2433
2434
2435
2436
2437
2438
2439
2440
2441
2442
2443
2444
2445
2446
2447
2448
2449
2450
2451
2452
2453
2454
2455
2456
2457
2458
2459
2460
2461
2462
2463
2464
2465
2466
2467
2468
2469
2470
2471
2472
2473
2474
2475
2476
2477
2478
2479
2480
2481
2482
2483
2484
2485
2486
2487
2488
2489
2490
2491
2492
2493
2494
2495
2496
2497
2498
2499
2500
2501
2502
2503
2504
2505
2506
2507
2508
2509
2510
2511
2512
2513
2514
2515
2516
2517
2518
2519
2520
2521
2522
2523
2524
2525
2526
2527
2528
2529
2530
2531
2532
2533
2534
2535
2536
2537
2538
2539
2540
2541
2542
2543
2544
2545
2546
2547
2548
2549
2550
2551
2552
2553
2554
2555
2556
2557
2558
2559
2560
2561
2562
2563
2564
2565
2566
2567
2568
2569
2570
2571
2572
2573
2574
2575
2576
2577
2578
2579
2580
2581
2582
2583
2584
2585
2586
2587
2588
2589
2590
2591
2592
2593
2594
25

PRODUCTION ENGINEERED

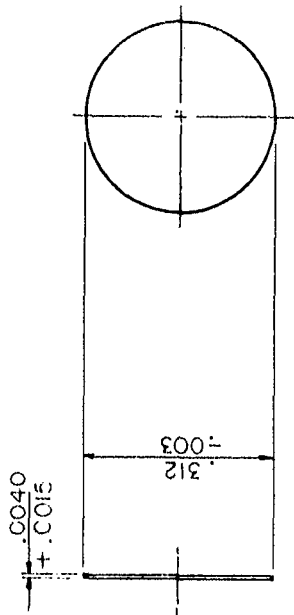
XM 415

SCALE - 2 1/2"
JUNE 20, 1961

JUNE 20, 1961

REVISIONS

NOTICE THIS DRAWING SHALL NOT BE USED
NOR REPRODUCED EITHER WHOLLY OR IN PART
EXCEPT WHEN AUTHORIZED IN CONNECTION WITH
UNITED STATES GOVERNMENT PROCUREMENT.



1 - SPECIFICATIONS MIL-G-2550, MIL-STD-8 AND LCA-PD-11 APPLY.

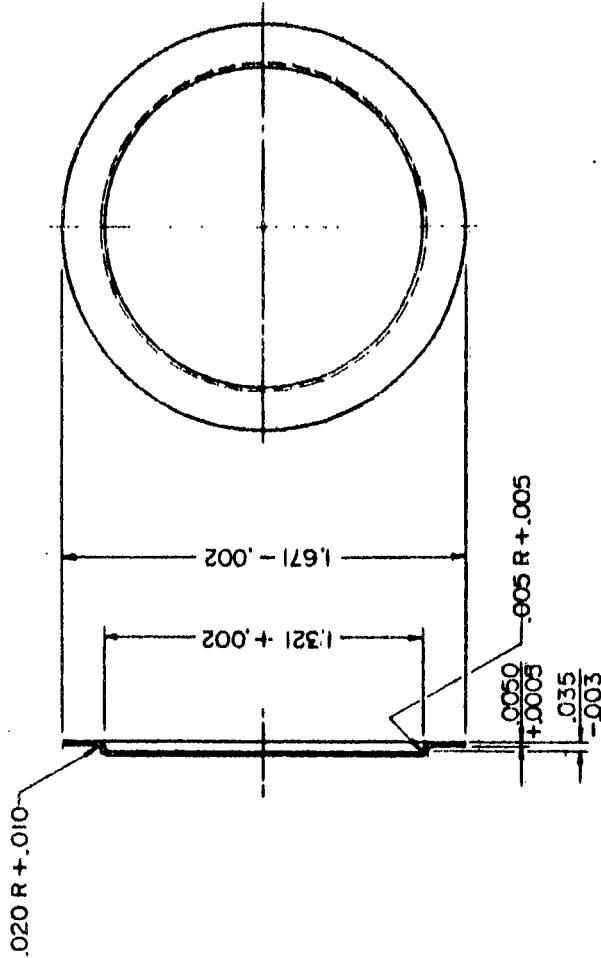
2 - MATERIAL :- PAPER (FOILING), TYPE I OR II, (COLOR, RED), SPEC JAN-P-224, EXCEPT FOR THICKNESS REQUIREMENT.

[illegible]

B-LCA-SK-420

NOTICE: THIS DRAWING SHALL NOT BE USED
OR REPRODUCED EITHER WHOLLY OR IN PART
EXCEPT WHEN AUTHORIZED IN CONNECTION WITH
UNITED STATES GOVERNMENT PROCUREMENT.

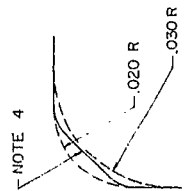
REVISED	DESCRIPTION	DATE	APPROVAL
574			



NOTES :-

- 1 - SPECIFICATIONS MIL-G-2550, MIL-STD-8 AND LCA-PD- APPLY.
- 2 - MATERIAL:- BRASS STRIP, ALLOY #6 ANNEALED, R_{15T} 65-72, ASTM SPEC B 36.
- 3 - DISCOLORATION PERMITTED.

ORDNANCE CORPS DEPT OF THE ARMY LAKE CITY ARSENAL INDEPENDENCE, MISSOURI		LCA-SK-420	
METERING DISCOVER		SCALE 2/1	UNIT WT
ORIGINAL DATE JUN 2, 1961	DESIGNED BY J. H. H. H.	CHECKED BY J. H. H. H.	APPROVED BY J. H. H. H.
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON DECIMALS		MATERIAL NOTE 2	
PHYSICAL PROPERTIES		TREATMENT	
TEMPERATURE		FINISH	
DO NOT DO		APPLY PART NO. IS SPECIFIED	



25/ ALL OVER EXCEPT AS NOTED

DETAIL "A"
SCALE: - 50/1

NOTES:-

- 1 - SPECIFICATIONS MIL-G-2550, MIL-STD-8, MIL-STD-10 AND LCA-P0- APPLY
- 2 - MATERIAL-STEEL, BAR, COLO-FINISHED, GRADES 1030 TO 1040, EXCEPT RESULTPURCHD GRADES, ASTM SPEC A108 GRAIN SIZE 5-8 PER ASTM SPEC E10
- 3 - ZINC PLATE; CLASS 3, TYPE II, BRASS COLOR, SPEC QQ-Z-325, BAKE AT 375° F FOR 3 HOURS IMMEDIATELY AFTER PLATING.
- 4 - SHAPE OF ENTRANCE TO PRIMER POCKET MAY VARY PROVIDED ALL SURFACES BLEND SMOOTHLY WITH EACH OTHER AND WITH PRIMER POCKET SIDEWALL AND BASE OF CASE PLUG. ALL SURFACES MUST BE WITHIN THE ZONE FORMED BY A Ø30 R-Ø10, TANGENT TO PRIMER POCKET SIDEWALL AND BASE OF CASE PLUG.
- 5 - THREAD TRACES PERMITTED IN THIS AREA.

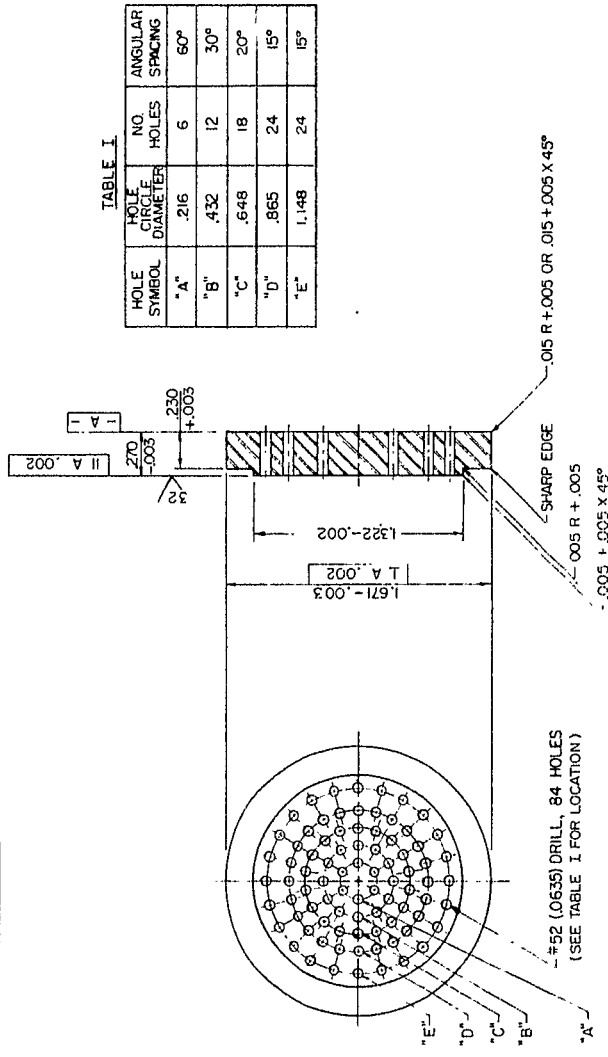
NOTICE THIS DRAWING SHALL NOT BE USED
 NOR REPRODUCED EITHER WHOLLY OR IN PART
 EXCEPT WHEN AUTHORIZED IN CONNECTION WITH
 UNITED STATES GOVERNMENT PROCUREMENT.

[illegible]

20 1177-1
; APR 29

TYPE	REVISIONS	DATE	BY

NOTICE: When Government drawings, specifications, or other data are used for any purpose other than in connection with a transaction with the Government, the Government assumes no liability for any errors or omissions, or for any consequences arising from the use of the same. It is the responsibility of the user to ensure that the drawings, specifications, or other data are used in accordance with the intended purpose and to obtain any necessary approvals or clearances from the appropriate authorities.

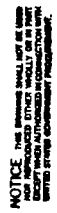


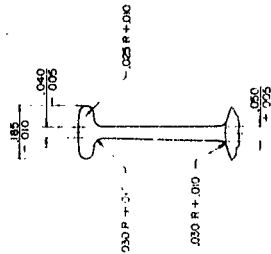
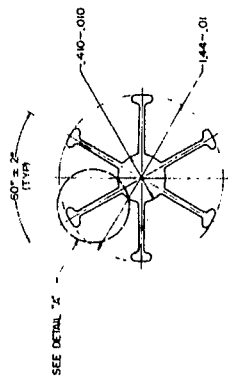
125 / ALL OVER EXCEPT AS NOTED

- NOTES:-
- 1 - SPECIFICATIONS MIL-G-2550, MIL-STD-8, MIL-STD-10 AND LCA-PD- . . APPLY.
 - 2 - MATERIAL:- STEEL, BAR, STAINLESS, TYPE 420 OR 420 F, ASTM SPEC A276.
 - 3 - GRIND $\frac{32}{1}$ FINISH AFTER DRILLING HOLES.
 - 4 - HARDEN AND TEMPER TO ROCKWELL C44 TO C49.

NOTICE: THIS DRAWING SHALL NOT BE USED FOR REPRODUCTION OR FOR ANY OTHER PURPOSE EXCEPT WHEN AUTHORIZED IN CONNECTION WITH UNITED STATES GOVERNMENT PROCUREMENT.

ORDNANCE CORPS DEPT OF THE ARMY LAKE CITY ARSENAL INDEPENDENCE, MISSOURI		METERING DISC		ORIGINAL DATE OF DRAWING JUN 2, 1961	
C LCA-SK-424		SCALE 2/1		UNIT WT	
UNLESS OTHERWISE SPECIFIED		DIMENSIONS ARE IN INCHES		TOLERANCES ON DECIMALS	
FRACTIONS		DECIMALS		ANGLES	
MATERIAL		NOTE 2		NOTE 4	
HEAT TREATMENT		NOTE 4		NOTE 4	
FINISH		NOTE 4		NOTE 4	
APPLY PART TO		APPLY PART TO		APPLY PART TO	
APPROVED BY		APPROVED BY		APPROVED BY	
DATE		DATE		DATE	



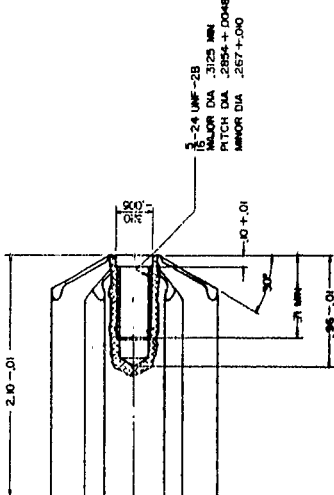
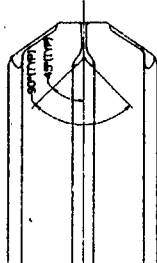


DETAIL A
SCALE: 3/1

NOTES :-

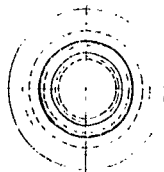
- 1 - SPECIFICATIONS MIL-G-2550, MIL-STD-8, MIL-STD-10 AND LCA-40-APPLY.
2 - FIN FRACTION: MAXIMUM DEFLECTION FROM STRAIGHT LINE, INCLUDING TWIST, OF ANY EDGE OR SURFACE SHALL NOT EXCEED .010 IN. WITH RESPECT TO CENTER LINE OF PART.
3 - ALL RADII MUST BE .01" WITH ADJACENT SURFACES.

NOTICE This notice shall not be used
not approved either orally or in print
except when authorized in connection with
other appropriate documents.



FINISH ALL OVER 1234

[illegible]

[illegible]

NOTES

1 - SPECIFICATION: MIL-STD-15 MIL-STD-102-A-100 APL-1

2 - MATERIAL: ALUMINUM ALLOY 2024-T3 45°W SPEC E211

ALTERNATE MATERIAL: ALUMINUM ALLOY 2017-T4, 45°W SPEC B211

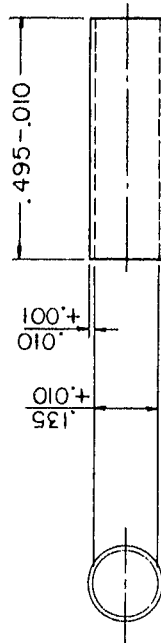
NOTICE This notice shall not be used
nor reproduced either wholly or in part
without authority in connection with
United States Government publications.

[illegible]

B-LCA-SK-440

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE PREPARED BY OR FOR THE GOVERNMENT, THE DRAWING OR DATA IS HEREBY
 1. THE DRAWING OR DATA IS HEREBY
 2. THE DRAWING OR DATA IS HEREBY
 3. THE DRAWING OR DATA IS HEREBY
 4. THE DRAWING OR DATA IS HEREBY
 5. THE DRAWING OR DATA IS HEREBY
 6. THE DRAWING OR DATA IS HEREBY
 7. THE DRAWING OR DATA IS HEREBY
 8. THE DRAWING OR DATA IS HEREBY
 9. THE DRAWING OR DATA IS HEREBY
 10. THE DRAWING OR DATA IS HEREBY

NOTICE THIS DRAWING SHALL NOT BE USED
 NOR REPRODUCED EITHER WHOLLY OR IN PART
 EXCEPT WHEN AUTHORIZED IN CONNECTION WITH
 UNITED STATES GOVERNMENT PROCUREMENT.



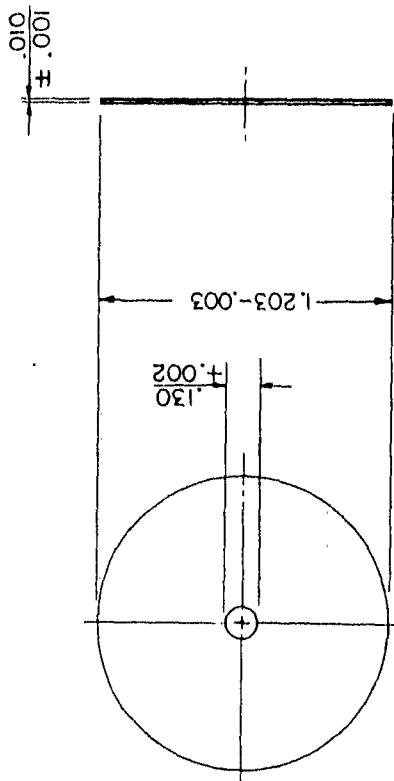
NOTES:-

- 1 - SPECIFICATIONS MIL-G-2550, MIL-STD-8 AND LCA-PD- . APPLY.
- 2 - MATERIAL:- PAPER, FOILING, TYPE II, SPEC JAN-P-224.

ORDNANCE CORPS DEPT OF THE ARMY LAKE CITY ARSENAL INDEPENDENCE, MISSOURI		DWG SIZE B		SHEET OF	
		LCA-SK-440			
EJECTION CHARGE SLEEVE (INNER)					
SCALE 4/1		UNIT WT 6 GR APPROX			
ORIGINAL DATE OF DRAWING JUN 14 1961		DRAFTSMAN J. J. J.		CHECKER J. J. J.	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES FRACTIONS DECIMALS ANGLES		MATERIAL NOTE 2		HEAT-TREATMENT	
PHYSICAL PROPERTIES TP TS EL 2 RA BH RH		NEXT ASSY		USED ON	
APPLICATION DO NOT DO		APPLY PART NO. AS SPECIFIED		FINAL PROTECTIVE FINISH	
APPROVED BY ORDER OF THE CHIEF OF ORDNANCE J. J. J.		APPROVED BY ORDER OF THE CHIEF OF ORDNANCE J. J. J.		APPROVED BY ORDER OF THE CHIEF OF ORDNANCE J. J. J.	

**NOTICE THIS DRAWING SHALL NOT BE USED
OR REPRODUCED EITHER WHOLLY OR IN PART
EXCEPT WHEN AUTHORIZED IN CONNECTION WITH
UNITED STATES GOVERNMENT PROCUREMENT.**

REVISIONS		
SYM	DESCRIPTION	DATE
		APPROVAL



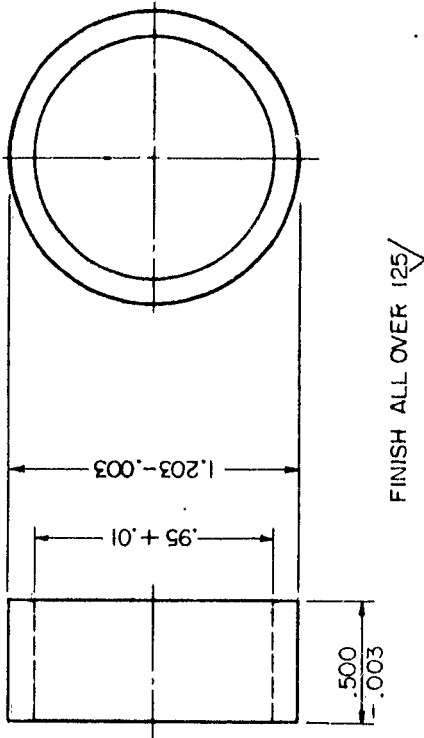
1 - SPECIFICATIONS MIL-G-2550, MIL-STD-8 AND LCA-PD-APPLY.

2 - MATERIAL:- ALUMINUM SHEET, ASTM SPEC B209.

[illegible]

NOTICE THIS DRAWING SHALL NOT BE USED
NOR REPRODUCED EITHER WHOLLY OR IN PART
EXCEPT WHEN AUTHORIZED IN CONNECTION WITH
UNITED STATES GOVERNMENT PROCUREMENT.

REVISIONS		
SYM	DESCRIPTION	DATE
		APPROVAL



1. SPECIFICATIONS MIL-G-2550, MIL-STD-8, MIL-STD-10 AND LCA-PD- APPLY.
2. MATERIAL: STEEL, BAR, COLD FINISHED, GRADE C-1020 TO C-1040 INCLUSIVE, ASTM SPEC A108. ALTERNATE MATERIAL: STEEL, TUBE, SEAMLESS, COLD-FINISHED, ASTM SPEC A210.

ORDNANCE PART NO.

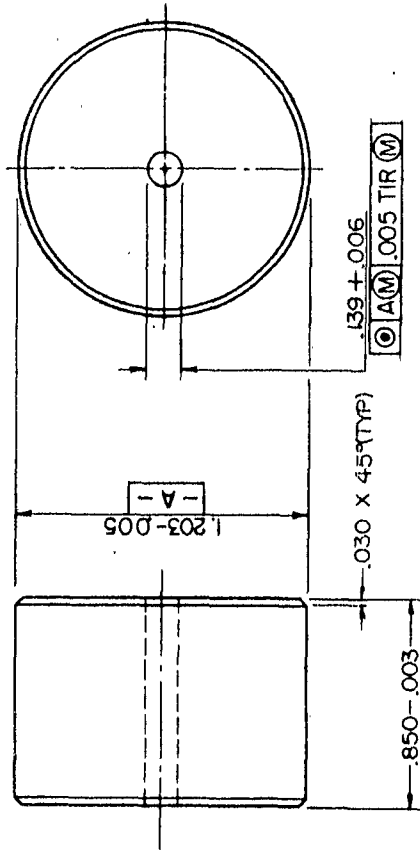
[illegible]

BICA-SK-443

NOTICE—When Government drawings, specifications, or other data are used for any purpose other than in connection with a specifically identified Government procurement, the Government assumes no responsibility for any inaccuracies, omissions, or errors. It is the responsibility of the user to ensure that the data are used in accordance with the intended purpose and that the data are not used in any way that would be injurious to the Government or its interests. The user is advised that the data are not to be used in any way that would be injurious to the Government or its interests. The user is advised that the data are not to be used in any way that would be injurious to the Government or its interests.

SYM	DESCRIPTION	DATE	APPROVAL

NOTICE THIS DRAWING SHALL NOT BE USED
OR REPRODUCED EITHER WHOLLY OR IN PART
EXCEPT WHEN AUTHORIZED IN CONNECTION WITH
UNITED STATES GOVERNMENT PROCUREMENT.



FINISH ALL OVER 125

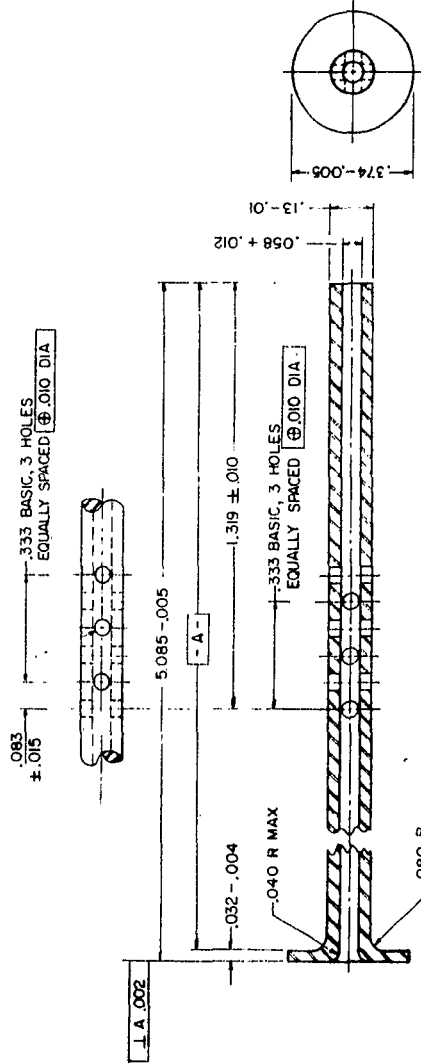
NOTES:-

1. SPECIFICATIONS MIL-G-2550, MIL-STD-8, MIL-STD-10 AND LCA-PD APPLY.
2. MATERIAL: D-38 ALLOY, SPEC MIL-U-46045, OR TUNGSTEN ALLOY, SPEC MIL-T-21014.

ORDNANCE CORPS DEPT OF THE ARMY LAKE CITY ARSENAL INDEPENDENCE, MISSOURI		DWG SIZE B		LCA-SK-443 SHEET 01	
COUNTERWEIGHT				SCALE 2/1	UNIT WT 4283 GR ± 35
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON ANGLES FRACTIONS DECIMALS ±20		ORIGINAL DATE OF DRAWING MAY 17, 1961		DRAFTSMAN TRACER CHECKER	
MATERIAL NOTE 2		SUBMITTED FOR APPROVAL		APPROVED BY ORDER OF THE CHIEF OF ORDNANCE MAJOR, ORN CORPS	
HEAT TREATMENT		FINAL PROTECTIVE FINISH			
PHYSICAL PROPERTIES		Y.P.		T.S.	
EL 2		RA		BH	
RH		RH			
NEXT ASSY		USED ON		APPLICATION	
DO NOT DO		APPLY PART NO. IF SPECIFIED			

C LCA-SK-445

55 DRILL (TYP)



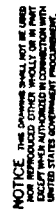
FINISH ALL OVER 125/

NOTES:-

- 1 - SPECIFICATIONS MIL-G-2550, MIL-STD-8
- 2 - MATERIAL:- STAINLESS STEEL TUBING ASTM SPEC A269.

NOTICE THIS DRAWING SHALL NOT BE USED FOR THE MANUFACTURE OF PARTS UNLESS IT IS ACCOMPANIED BY THE RELEVANT TECHNICAL SPECIFICATIONS AND MATERIAL SPECIFICATIONS. ANY DEVIATION FROM THESE SPECIFICATIONS SHALL BE REPORTED TO THE ORDNANCE CORPS.

ORDNANCE CORPS DEPT OF THE ARMY LAKE CITY ARSENAL INDEPENDENCE, MISSOURI		C LCA-SK-445 SHEET 1 OF 1	
IGNITER TUBE		SCALE 4/1 UNIT WT 97.3 GR ± 1	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE FRACTIONS DECIMALS ANGLES - .010 - .010		APPROVED BY: [Signature] DATE: MAY 23 1961 BY: [Signature] DATE: [Blank] SUBMITTED BY: [Signature] DATE: [Blank] REMOVED BY: [Signature] DATE: [Blank]	
MATERIAL: NOTE 2 HEAT TREATMENT: [Blank] FINISH: 125/		PHYSICAL PROPERTIES TYP. ST. EL. HA. BR. PH. TENSILE STRENGTH YIELD STRENGTH ELONGATION REDUCTION OF AREA IMPACT HARDNESS	
APPLICATION: [Blank]		TEST METHOD: [Blank] AS SPECIFIED	

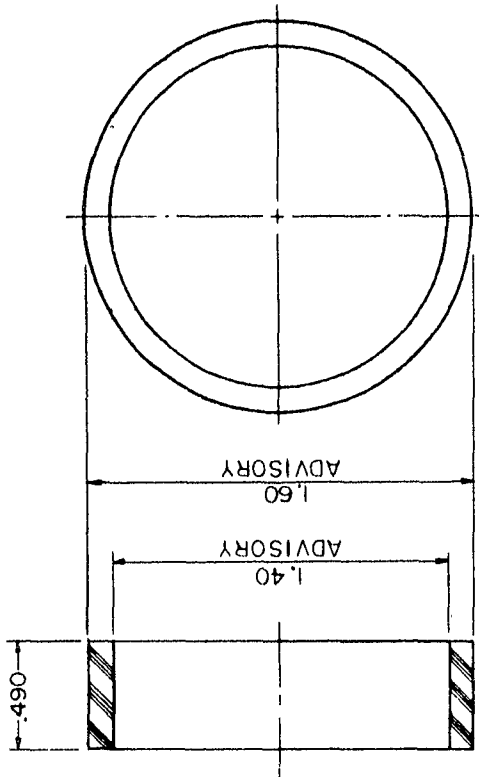


B-LCA-SK-448

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFENSE CONTRACT, THE USER SHALL BE RESPONSIBLE FOR OBTAINING NECESSARY PERMISSIONS FROM THE GOVERNMENT. THE GOVERNMENT MAKES NO WARRANTY, REPRESENTATION, OR GUARANTEE, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, PREPARED, OR PROVIDED SUCH DATA DOES NOT CONSTITUTE AN ENDORSEMENT OR A GUARANTEE OF THE QUALITY OR THE RESULTS OF THE USE THEREOF. THE USER SHALL BE RESPONSIBLE FOR OBTAINING NECESSARY PERMISSIONS FROM THE GOVERNMENT. THE GOVERNMENT MAKES NO WARRANTY, REPRESENTATION, OR GUARANTEE, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, PREPARED, OR PROVIDED SUCH DATA DOES NOT CONSTITUTE AN ENDORSEMENT OR A GUARANTEE OF THE QUALITY OR THE RESULTS OF THE USE THEREOF.

NOTICE THIS DRAWING SHALL NOT BE USED
NOR REPRODUCED EITHER WHOLLY OR IN PART
EXCEPT WHEN AUTHORIZED IN CONNECTION WITH
UNITED STATES GOVERNMENT PROCUREMENT.

REVISIONS		
SYM	DESCRIPTION	DATE
A	MOLDING PLASTIC WAS TEFLON, ADDED ALTERNATE MATERIAL	7-25-61
		<i>For</i>



NOTES:-

- 1 - SPECIFICATIONS MIL-G-2550, MIL-STD-8 AND LCA-PD-- APPLY.
 - 2 - MATERIAL:- MOLDING PLASTIC (TFE-FLUOROCARBON RESIN) SPEC MIL-M-14077.
- ALTERNATE MATERIAL:- LEAD TIN ALLOY, ALLOY GRADE 10B, ASTM SPEC B 32.

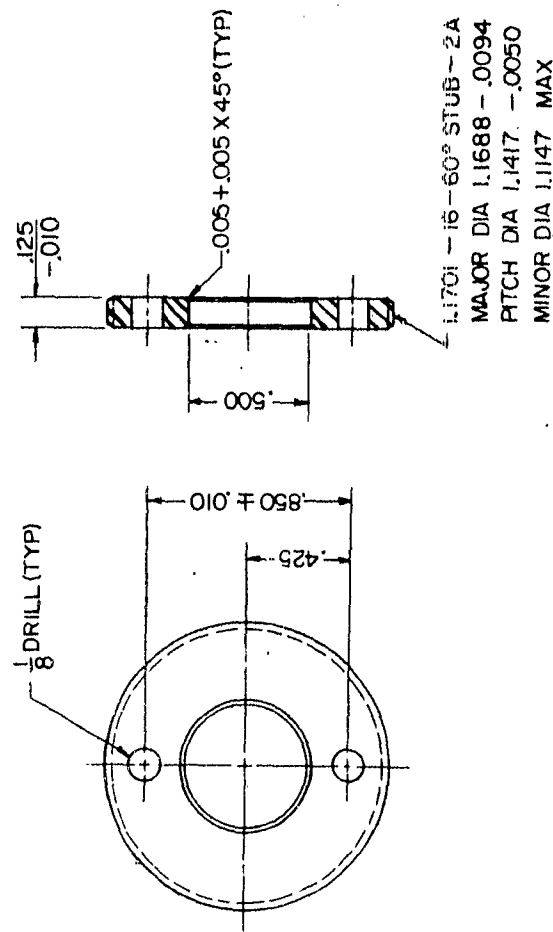
ORDNANCE CORPS DEPT OF THE ARMY LAKE CITY ARSENAL INDEPENDENCE, MISSOURI		DWG SIZE B		LCA-SK-448 SHEET OF	
OBTURATING BAND BLANK				SCALE 2/1	UNIT WT 128 GR APPROX
ORIGINAL DATE OF DRAWING JUN 5, 1961		DRAFTSMAN TRACER CHECKER		APPROVED BY ORDER OF THE CHIEF OF ORDNANCE MAJOR, ORDN CORPS	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES FRACTIONS DECIMALS ANGLES TOLERANCES ON ±.005		MATERIAL NOTE 2		HEAT-TREATMENT	
PHYSICAL PROPERTIES		NEXT ASSY		USED ON	
VP		APPLICATION		DO NOT DO	
TE		APPLY PART NO.		AS SPECIFIED	
EL 2					
RA					
BH					
RH					

B-LCA-SK-449

NOTICE - When Government specifications, or other data are used in the design of a part, the designer is responsible for the proper interpretation and application of such data. The designer is also responsible for the proper interpretation and application of the data furnished by the manufacturer. The designer is also responsible for the proper interpretation and application of the data furnished by the manufacturer. The designer is also responsible for the proper interpretation and application of the data furnished by the manufacturer.

NOTICE THIS DRAWING SHALL NOT BE USED
OR REPRODUCED EITHER WHOLLY OR IN PART
EXCEPT WHEN AUTHORIZED IN CONNECTION WITH
UNITED STATES GOVERNMENT PROCUREMENT.

REVISIONS		
SYM	DESCRIPTION	DATE



NOTES:-

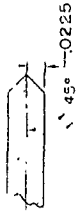
- 1 - SPECIFICATIONS MIL-G-2550, MIL-STD-8
- 2 - MATERIAL: STEEL, BAR, COLD-FINISHED, GRADES C 1030 TO C1040, ASTM SPEC A 108. GRAIN SIZE 5-8 PER ASTM SPEC E 19.
- 3 - ZINC PLATE; CLASS 3, TYPE II, SPEC QQ-Z-325: BRASS COLOR.

ORDNANCE CORPS DEPT OF THE ARMY LAKE CITY ARSENAL INDEPENDENCE, MISSOURI		DWS SIZE B		LCA-SK-449 SHEET	
RETAINER		SCALE 2/1		UNIT WT	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES FRACTIONS DECIMALS ANGLES ± 1/64 ± .005 ± 2°		ORIGINAL DATE OF DRAWING JUN 9 1961		DRAWN BY CHECKED	
MATERIAL NOTE 2		TRACER		CHECKER	
HEAT TREATMENT		SUBMITTED		APPROVED BY ORDER OF THE CHIEF OF ORDNANCE Charles E. Ramsey MAJOR, ORDN CORPS	
FINAL PROTECTIVE FINISH NOTE 3		APPROVED BY ORDER OF THE CHIEF OF ORDNANCE Charles E. Ramsey MAJOR, ORDN CORPS		APPROVED BY ORDER OF THE CHIEF OF ORDNANCE Charles E. Ramsey MAJOR, ORDN CORPS	
PHYSICAL PROPERTIES		YF		TS	
EL 2		RA		BH	
RH		RH		RH	
APPLICATION		NEXT ASSY		USED ON	
DO NOT DO		APPLY PART NO. 75-SPECIFIED		APPLY PART NO. 75-SPECIFIED	

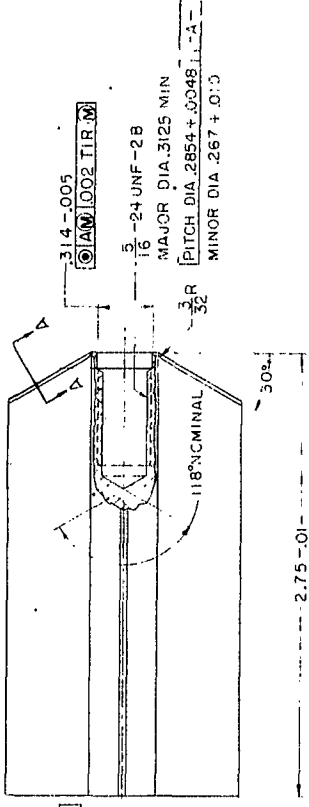
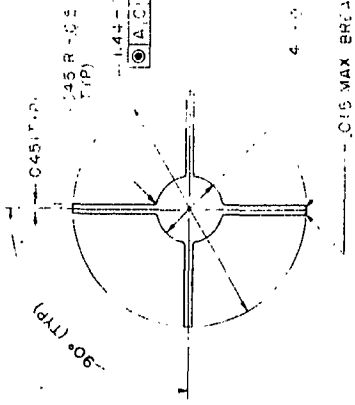
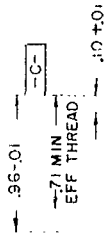
NOTICE
 The undersigned, James M. Smith, being duly sworn, deposes and says that he is the sole proprietor of the above named business, and that he has no other person or persons connected with the same, and that the same is not being conducted in connection with any other business, and that the same is not being conducted for the purpose of evading the payment of taxes, and that the same is not being conducted for the purpose of defrauding the creditors of the same, and that the same is not being conducted for the purpose of defrauding the public, and that the same is not being conducted for the purpose of defrauding the government, and that the same is not being conducted for the purpose of defrauding the people, and that the same is not being conducted for the purpose of defrauding the world.

NOTES: 1. - SPECIFICATIONS MIL-3-2550, MIL-STD-8, MIL-STD-10 AND -PD- APPLY. 2. - MATERIAL: ALUM NUM ALLOY, 2024-T4, SPEC QQ-A-267. 3. - FIN STRAIGHTNESS: MAXIMUM DEVIATION FROM STRAIGHT LINE, INCLUDING TWIST, OF ANY EDGE OR SURFACE SHALL NOT EXCEED .003 PER INCH OF LENGTH WITH RESPECT TO CENTERLINE OF PART. 4. - ALL RADI MUST BLEND SMOOTHLY WITH ADJACENT SURFACES.

90° TYP



SECTION A-A
SCALE 10/1

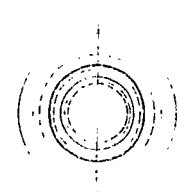


FINISH ALL OVER 125

NOTES:

1. - SPECIFICATIONS MIL-3-2550, MIL-STD-8, MIL-STD-10 AND -PD- APPLY.
2. - MATERIAL: ALUM NUM ALLOY, 2024-T4, SPEC QQ-A-267.
3. - FIN STRAIGHTNESS: MAXIMUM DEVIATION FROM STRAIGHT LINE, INCLUDING TWIST, OF ANY EDGE OR SURFACE SHALL NOT EXCEED .003 PER INCH OF LENGTH WITH RESPECT TO CENTERLINE OF PART.
4. - ALL RADI MUST BLEND SMOOTHLY WITH ADJACENT SURFACES.

ORDNANCE CORPS DEPT OF THE ARMY LAKE CITY ARSENAL INDEPENDENCE, MISSOURI		C LCA-SK-451	
T A		SCALE 2/1	
APPROVED BY: <i>[Signature]</i>		APPROVED BY: <i>[Signature]</i>	
DATE: <i>[Date]</i>		DATE: <i>[Date]</i>	
DESIGNED BY: <i>[Signature]</i>		DESIGNED BY: <i>[Signature]</i>	
CHECKED BY: <i>[Signature]</i>		CHECKED BY: <i>[Signature]</i>	
DRAWN BY: <i>[Signature]</i>		DRAWN BY: <i>[Signature]</i>	
DATE: <i>[Date]</i>		DATE: <i>[Date]</i>	
SHEET		SHEET	



$\frac{5}{10} = 24$ 34F - 24
 $\frac{10}{10} = 24$ 34F - 24
P.T.C.H. 24 2943 - 24
 MINOR DU. 2603 MAX

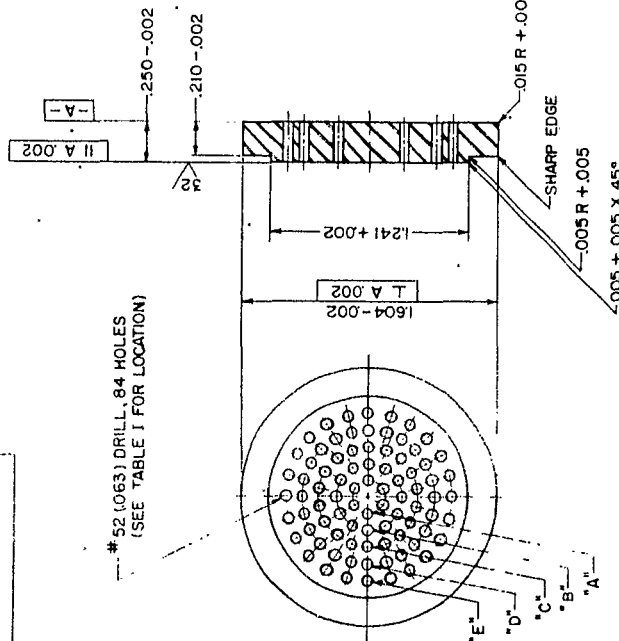
1. The first step is to identify the key components of the system. This includes understanding the hardware, software, and data involved. It also involves identifying the users and their roles.

NOTICE The undersigned hereby certifies that the foregoing is a true and correct copy of the original as the same appears in the records of the County of Los Angeles, California.

[illegible]

REV	DESCRIPTION	DATE	BY
1			

HOLE SYMBOL	HOLE CIRCLE DIAMETER	NO. HOLES	ANGULAR SPACING
"A"	.207	6	60°
"B"	.414	12	30°
"C"	.621	18	20°
"D"	.828	24	15°
"E"	1.035	24	15°



125/ ALL OVER EXCEPT AS NOTED.

NOTES:-

1. SPECIFICATIONS MIL-2550, MIL-STD-8, MIL-STD-10 AND LCA-PD--X APPLY.
2. MATERIAL:- STEEL, SAH, STAINLESS, TYPE 420 OR 420F, ASTM SPEC A276.
3. GRIND 32/ FINISH AFTER DRILLING HOLES.
4. HARDEN AND TEMPER TO ROCKWELL C44 TO C49.

NOTICE THIS DRAWING SHALL NOT BE USED FOR REPRODUCTION EITHER WHOLLY OR IN PART EXCEPT WHEN AUTHORIZED IN CONNECTION WITH UNITED STATES GOVERNMENT PROCUREMENT.

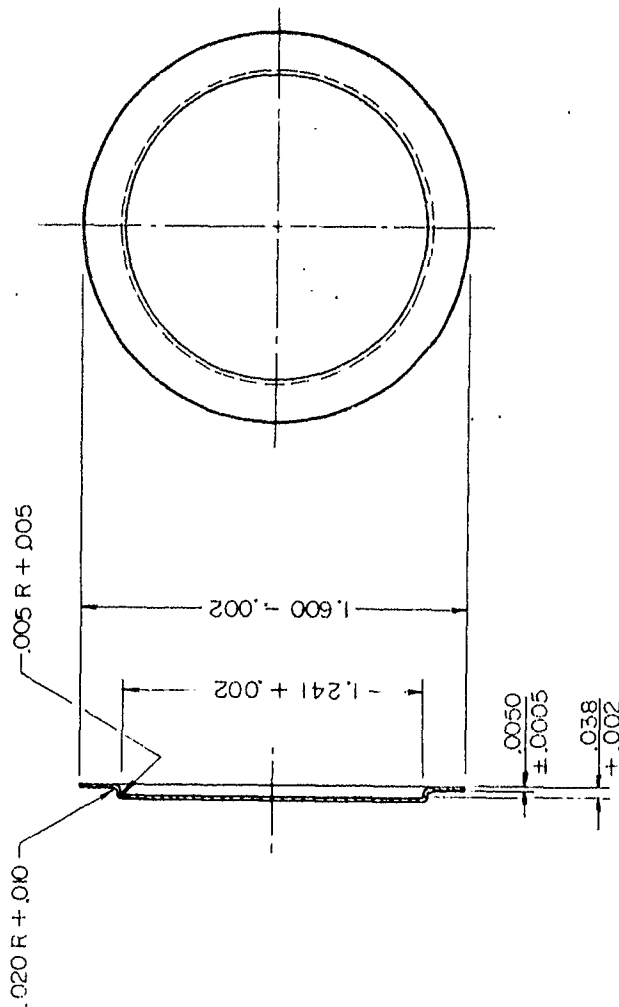
ORDNANCE CORPS DEPT OF THE ARMY LAKE CITY ARSENAL INDEPENDENCE, MISSOURI		METERING DISC FOR P.A. CASE AA-44-1666		C LCA-SK-425	
ORIGINAL DATE OF DRAWING JUN 5, 1961		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES FRACTIONS DECIMALS ANGLES 1/16 1/32 1/64 1/8 1/4 1/2 3/4 1 1 1/2 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100		SUBMITTED BY APPROVED BY DATE	
MATERIAL NOTE 2		HEAT TREATMENT NOTE 4		FINISH-MANUFACTURE FINISH	
APPLICATION		APPLY PART NO.		SCALE 2/1 UNIT WT	

B-LCA-SK-426

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED IN CONNECTION WITH A GOVERNMENT CONTRACT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING THE LATEST EDITION OF SUCH DATA. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING THE LATEST EDITION OF SUCH DATA. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING THE LATEST EDITION OF SUCH DATA.

NOTICE THIS DRAWING SHALL NOT BE USED
NOR REPRODUCED EITHER WHOLLY OR IN PART
EXCEPT WHEN AUTHORIZED IN CONNECTION WITH
UNITED STATES GOVERNMENT PROCUREMENT.

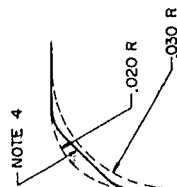
SYM	REVISIONS	DATE	APPROVAL
	DESCRIPTION		



NOTES

- 1 - SPECIFICATIONS MIL-G-2550, MIL-STD-9 AND LCA-PD- APPLY.
- 2 - MATERIAL - BRASS STRIP, ALLOY #6 ANNEALED, R15T 65-72, ASTM SPEC B 36
- 3 - DISCOLORATION PERMITTED.

ORDNANCE CORPS DEPT OF THE ARMY LAKE CITY ARSENAL INDEPENDENCE, MISSOURI		DWG SIZE B		SHEET OF	
METERING DISC COVER FOR P.A. CASE AA-44-1666					
SCALE 2/1		UNIT WT			
ORIGINAL DATE OF DRAWING JUL 5, 1961		DRAFTERMAN 3523		CHECKER	
TRACKER 488		SUBMITTED 10/1/61		APPROVED BY ORDER OF THE CHIEF OF ORDNANCE 10/1/61	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES FRACTIONS DECIMALS ANGLES		MATERIAL NOTE 2		HEAT-TREATMENT	
PHYSICAL PROPERTIES YP TS EL-2 RA BH RH		FINISH-PROTECTIVE FINISH		APPLICATION USED ON	
DO NOT DO		APPLY PART NO. AS SPECIFIED			



DETAIL "A"
SCALE:- 50/1

25/ ALL OVER EXCEPT AS NOTED

- 1-1- SPECIFICATIONS MIL-G-2550, MIL-STD-8, MIL-STD-10 AND LCA-PD-10, APPLY.
- 2- MATERIAL - STEEL, BAR, COLD-FINISHED, GRADES 1030 TO 1040, EXCEPT RESULT PHURIZED GRADES, ASTM SPEC A08. GRAIN SIZE 5-8 PER ASTM SPEC E19.
- 3- ZINC PLATE; CLASS 3, TYPE II, BRASS COLOR, SPEC QQ-Z-325. BAKE AT 375° F FOR 3 HOURS IMMEDIATELY AFTER PLATING.
- 4- SHAPE OF ENTRANCE TO PRIMER POCKET MAY VARY PROVIDED ALL SURFACES BLEND SMOOTHLY WITH EACH OTHER AND WITH PRIMER POCKET SIDEWALL AND BASE OF CASE PLUG. ALL SURFACES MUST BE WITHIN THE ZONE FORMED BY A .030 R- .010, TANGENT TO PRIMER POCKET SIDEWALL AND BASE OF CASE PLUG.
- 5- THREAD TRACES PERMITTED IN THIS AREA.

NOTICE THIS DRAWING SHALL NOT BE USED FOR REPRODUCTION EITHER WHOLLY OR IN PART EXCEPT WHEN AUTHORIZED IN CONNECTION WITH UNITED STATES GOVERNMENT PROCUREMENT.

ORDNANCE CORPS DEPT OF THE ARMY LAKE CITY ARSENAL INDEPENDENCE, MISSOURI										CASE PLUG (EXTREME RANGE) FOR P.A. CASE AA-44-1666										LCA SK-427 SHEET 02 C	
ORIGINAL DATE OF DRAWING JUL 5 1961										SCALE 2/1										SHEET WT	
TOLERANCES UNLESS OTHERWISE SPECIFIED										TOLERANCES UNLESS OTHERWISE SPECIFIED										TOLERANCES UNLESS OTHERWISE SPECIFIED	
FRACTIONS DECIMALS ANGLES										FRACTIONS DECIMALS ANGLES										FRACTIONS DECIMALS ANGLES	
1/16 .0006 1/32 .0012 1/64 .0024										1/16 .0006 1/32 .0012 1/64 .0024										1/16 .0006 1/32 .0012 1/64 .0024	
MATERIAL										MATERIAL										MATERIAL	
NOTE 2										NOTE 2										NOTE 2	
TEST METHOD										TEST METHOD										TEST METHOD	
FINAL PROTECTIVE FINISH										FINAL PROTECTIVE FINISH										FINAL PROTECTIVE FINISH	
APPLY PART NO.										APPLY PART NO.										APPLY PART NO.	
PART NO.										PART NO.										PART NO.	
APPLICATION										APPLICATION										APPLICATION	
PART NAME										PART NAME										PART NAME	
MATERIAL										MATERIAL										MATERIAL	
TOLERANCES										TOLERANCES										TOLERANCES	
FRACTIONS										FRACTIONS										FRACTIONS	
DECIMALS										DECIMALS										DECIMALS	
ANGLES										ANGLES										ANGLES	
MATERIAL										MATERIAL										MATERIAL	
NOTE 2										NOTE 2										NOTE 2	
TEST METHOD										TEST METHOD										TEST METHOD	
FINAL PROTECTIVE FINISH										FINAL PROTECTIVE FINISH										FINAL PROTECTIVE FINISH	
APPLY PART NO.										APPLY PART NO.										APPLY PART NO.	
PART NO.										PART NO.										PART NO.	
APPLICATION										APPLICATION										APPLICATION	
PART NAME										PART NAME										PART NAME	
MATERIAL										MATERIAL										MATERIAL	
TOLERANCES										TOLERANCES										TOLERANCES	
FRACTIONS										FRACTIONS										FRACTIONS	
DECIMALS										DECIMALS										DECIMALS	
ANGLES										ANGLES										ANGLES	
MATERIAL										MATERIAL										MATERIAL	
NOTE 2										NOTE 2										NOTE 2	
TEST METHOD										TEST METHOD										TEST METHOD	
FINAL PROTECTIVE FINISH										FINAL PROTECTIVE FINISH										FINAL PROTECTIVE FINISH	
APPLY PART NO.										APPLY PART NO.										APPLY PART NO.	
PART NO.										PART NO.										PART NO.	
APPLICATION										APPLICATION										APPLICATION	
PART NAME										PART NAME										PART NAME	
MATERIAL										MATERIAL										MATERIAL	
TOLERANCES										TOLERANCES										TOLERANCES	
FRACTIONS										FRACTIONS										FRACTIONS	
DECIMALS										DECIMALS										DECIMALS	
ANGLES										ANGLES										ANGLES	
MATERIAL										MATERIAL										MATERIAL	
NOTE 2										NOTE 2										NOTE 2	
TEST METHOD										TEST METHOD										TEST METHOD	
FINAL PROTECTIVE FINISH										FINAL PROTECTIVE FINISH										FINAL PROTECTIVE FINISH	
APPLY PART NO.										APPLY PART NO.										APPLY PART NO.	
PART NO.										PART NO.										PART NO.	
APPLICATION										APPLICATION										APPLICATION	
PART NAME										PART NAME										PART NAME	
MATERIAL										MATERIAL										MATERIAL	
TOLERANCES										TOLERANCES										TOLERANCES	
FRACTIONS										FRACTIONS										FRACTIONS	
DECIMALS										DECIMALS										DECIMALS	
ANGLES										ANGLES										ANGLES	
MATERIAL										MATERIAL										MATERIAL	
NOTE 2										NOTE 2										NOTE 2	
TEST METHOD										TEST METHOD										TEST METHOD	
FINAL PROTECTIVE FINISH										FINAL PROTECTIVE FINISH										FINAL PROTECTIVE FINISH	
APPLY PART NO.										APPLY PART NO.										APPLY PART NO.	
PART NO.										PART NO.										PART NO.	
APPLICATION										APPLICATION										APPLICATION	
PART NAME										PART NAME										PART NAME	
MATERIAL										MATERIAL										MATERIAL	
TOLERANCES										TOLERANCES										TOLERANCES	
FRACTIONS										FRACTIONS										FRACTIONS	
DECIMALS										DECIMALS										DECIMALS	
ANGLES										ANGLES										ANGLES	
MATERIAL										MATERIAL										MATERIAL	
NOTE 2										NOTE 2										NOTE 2	
TEST METHOD										TEST METHOD										TEST METHOD	
FINAL PROTECTIVE FINISH										FINAL PROTECTIVE FINISH										FINAL PROTECTIVE FINISH	
APPLY PART NO.										APPLY PART NO.										APPLY PART NO.	
PART NO.										PART NO.										PART NO.	
APPLICATION										APPLICATION										APPLICATION	
PART NAME										PART NAME										PART NAME	
MATERIAL										MATERIAL										MATERIAL	
TOLERANCES										TOLERANCES										TOLERANCES	
FRACTIONS										FRACTIONS										FRACTIONS	
DECIMALS										DECIMALS										DECIMALS	
ANGLES										ANGLES										ANGLES	
MATERIAL										MATERIAL										MATERIAL	
NOTE 2										NOTE 2										NOTE 2	
TEST METHOD										TEST METHOD										TEST METHOD	
FINAL PROTECTIVE FINISH										FINAL PROTECTIVE FINISH										FINAL PROTECTIVE FINISH	
APPLY PART NO.										APPLY PART NO.										APPLY PART NO.	
PART NO.										PART NO.										PART NO.	
APPLICATION										APPLICATION										APPLICATION	
PART NAME										PART NAME										PART NAME	
MATERIAL										MATERIAL										MATERIAL	
TOLERANCES										TOLERANCES										TOLERANCES	
FRACTIONS										FRACTIONS										FRACTIONS	
DECIMALS										DECIMALS										DECIMALS	
ANGLES										ANGLES										ANGLES	
MATERIAL										MATERIAL										MATERIAL	
NOTE 2										NOTE 2										NOTE 2	
TEST METHOD										TEST METHOD										TEST METHOD	
FINAL PROTECTIVE FINISH										FINAL PROTECTIVE FINISH										FINAL PROTECTIVE FINISH	
APPLY PART NO.										APPLY PART NO.										APPLY PART NO.	
PART NO.										PART NO.										PART NO.	
APPLICATION										APPLICATION										APPLICATION	
PART NAME										PART NAME										PART NAME	
MATERIAL										MATERIAL										MATERIAL	
TOLERANCES										TOLERANCES										TOLERANCES	
FRACTIONS										FRACTIONS										FRACTIONS	
DECIMALS										DECIMALS										DECIMALS	
ANGLES										ANGLES										ANGLES	
MATERIAL										MATERIAL										MATERIAL	
NOTE 2										NOTE 2										NOTE 2	
TEST METHOD										TEST METHOD										TEST METHOD	
FINAL PROTECTIVE FINISH										FINAL PROTECTIVE FINISH										FINAL PROTECTIVE FINISH	
APPLY PART NO.										APPLY PART NO.										APPLY PART NO.	
PART NO.										PART NO.										PART NO.	
APPLICATION										APPLICATION										APPLICATION	
PART NAME										PART NAME										PART NAME	
MATERIAL										MATERIAL										MATERIAL	
TOLERANCES										TOLERANCES										TOLERANCES	
FRACTIONS										FRACTIONS										FRACTIONS	
DECIMALS										DECIMALS										DECIMALS	
ANGLES										ANGLES										ANGLES	
MATERIAL										MATERIAL										MATERIAL	
NOTE 2										NOTE 2										NOTE 2	
TEST METHOD										TEST METHOD										TEST METHOD	
FINAL PROTECTIVE FINISH										FINAL PROTECTIVE FINISH										FINAL PROTECTIVE FINISH	
APPLY PART NO.										APPLY PART NO.										APPLY PART NO.	
PART NO.										PART NO.										PART NO.	
APPLICATION										APPLICATION										APPLICATION	
PART NAME										PART NAME										PART NAME	
MATERIAL										MATERIAL										MATERIAL	
TOLERANCES										TOLERANCES										TOLERANCES	
FRACTIONS										FRACTIONS										FRACTIONS	
DECIMALS										DECIMALS										DECIMALS	
ANGLES										ANGLES										ANGLES	
MATERIAL										MATERIAL										MATERIAL	
NOTE 2										NOTE 2										NOTE 2	
TEST METHOD										TEST METHOD										TEST METHOD	
FINAL PROTECTIVE FINISH										FINAL PROTECTIVE FINISH										FINAL PROTECTIVE FINISH	
APPLY PART NO.										APPLY PART NO.										APPLY PART NO.	
PART NO.										PART NO.										PART NO.	
APPLICATION										APPLICATION										APPLICATION	
PART NAME										PART NAME										PART NAME	
MATERIAL										MATERIAL										MATERIAL	
TOLERANCES										TOLERANCES										TOLERANCES	
FRACTIONS										FRACTIONS										FRACTIONS	
DECIMALS										DECIMALS										DECIMALS	
ANGLES										ANGLES										ANGLES	
MATERIAL										MATERIAL										MATERIAL	
NOTE 2										NOTE 2										NOTE 2	
TEST METHOD										TEST METHOD										TEST METHOD	
FINAL PROTECTIVE FINISH										FINAL PROTECTIVE FINISH										FINAL PROTECTIVE FINISH	
APPLY PART NO.										APPLY PART NO.										APPLY PART NO.	
PART NO.										PART NO.										PART NO.	
APPLICATION										APPLICATION										APPLICATION	
PART NAME										PART NAME										PART NAME	
MATERIAL										MATERIAL										MATERIAL	
TOLERANCES										TOLERANCES										TOLERANCES	
FRACTIONS										FRACTIONS										FRACTIONS	
DECIMALS										DECIMALS										DECIMALS	
ANGLES										ANGLES										ANGLES	
MATERIAL										MATERIAL										MATERIAL	
NOTE 2										NOTE 2										NOTE 2	
TEST METHOD										TEST METHOD										TEST METHOD	
FINAL PROTECTIVE FINISH										FINAL PROTECTIVE FINISH										FINAL PROTECTIVE FINISH	
APPLY PART NO.										APPLY PART NO.										APPLY PART NO.	
PART NO.										PART NO.										PART NO.	
APPLICATION										APPLICATION										APPLICATION	
PART NAME										PART NAME										PART NAME	
MATERIAL										MATERIAL										MATERIAL	
TOLERANCES										TOLERANCES										TOLERANCES	
FRACTIONS										FRACTIONS										FRACTIONS	
DECIMALS										DECIMALS										DECIMALS	
ANGLES										ANGLES										ANGLES	
MATERIAL										MATERIAL										MATERIAL	
NOTE 2										NOTE 2										NOTE 2	
TEST METHOD										TEST METHOD										TEST METHOD	
FINAL PROTECTIVE FINISH										FINAL PROTECTIVE FINISH										FINAL PROTECTIVE FINISH	
APPLY PART NO.										APPLY PART NO.										APPLY PART NO.	
PART NO.										PART NO.										PART NO.	
APPLICATION										APPLICATION										APPLICATION	
PART NAME										PART NAME										PART NAME	
MATERIAL										MATERIAL										MATERIAL	
TOLERANCES										TOLERANCES										TOLERANCES	
FRACTIONS										FRACTIONS										FRACTIONS	
DECIMALS										DECIMALS										DECIMALS	
ANGLES										ANGLES										ANGLES	
MATERIAL										MATERIAL										MATERIAL	
NOTE 2										NOTE 2										NOTE 2	
TEST METHOD										TEST METHOD										TEST METHOD	
FINAL PROTECTIVE FINISH										FINAL PROTECTIVE FINISH										FINAL PROTECTIVE FINISH	
APPLY PART NO.										APPLY PART NO.										APPLY PART NO.	
PART NO.										PART NO.										PART NO.	
APPLICATION										APPLICATION										APPLICATION	
PART NAME										PART NAME										PART NAME	
MATERIAL										MATERIAL										MATERIAL	
TOLERANCES										TOLERANCES										TOLERANCES	
FRACTIONS										FRACTIONS										FRACTIONS	
DECIMALS										DECIMALS										DECIMALS	
ANGLES										ANGLES										ANGLES	
MATERIAL										MATERIAL										MATERIAL	
NOTE 2										NOTE 2										NOTE 2	
TEST METHOD										TEST METHOD										TEST METHOD	
FINAL PROTECTIVE FINISH										FINAL PROTECTIVE FINISH										FINAL PROTECTIVE FINISH	
APPLY PART NO.										APPLY PART NO.										APPLY PART NO.	
PART NO.										PART NO.										PART NO.	
APPLICATION										APPLICATION										APPLICATION	
PART NAME										PART NAME										PART NAME	
MATERIAL										MATERIAL										MATERIAL	
TOLERANCES										TOLERANCES										TOLERANCES	
FRACTIONS										FRACTIONS										FRACTIONS	
DECIMALS										DECIMALS										DECIMALS	
ANGLES										ANGLES										ANGLES	
MATERIAL										MATERIAL										MATERIAL	
NOTE 2										NOTE 2										NOTE 2	
TEST METHOD										TEST METHOD										TEST METHOD	
FINAL PROTECTIVE FINISH										FINAL PROTECTIVE FINISH										FINAL PROTECTIVE FINISH	
APPLY PART NO.										APPLY PART NO.										APPLY PART NO.	
PART NO.										PART NO.										PART NO.	
APPLICATION										APPLICATION										APPLICATION	
PART NAME										PART NAME										PART NAME	
MATERIAL										MATERIAL										MATERIAL	
TOLERANCES										TOLERANCES										TOLERANCES	
FRACTIONS										FRACTIONS										FRACTIONS	
DECIMALS										DECIMALS										DECIMALS	
ANGLES										ANGLES										ANGLES	
MATERIAL										MATERIAL										MATERIAL	
NOTE 2										NOTE 2										NOTE 2	
TEST METHOD										TEST METHOD										TEST METHOD	
FINAL PROTECTIVE FINISH										FINAL PROTECTIVE FINISH										FINAL PROTECTIVE FINISH	
APPLY PART NO.										APPLY PART NO.										APPLY PART NO.	
PART NO.										PART NO.										PART NO.	
APPLICATION										APPLICATION										APPLICATION	
PART NAME										PART NAME										PART NAME	
MATERIAL										MATERIAL										MATERIAL	
TOLERANCES										TOLERANCES										TOLERANCES	
FRACTIONS										FRACTIONS										FRACTIONS	
DECIMALS										DECIMALS										DECIMALS	
ANGLES										ANGLES										ANGLES	
MATERIAL										MATERIAL										MATERIAL	
NOTE 2										NOTE 2										NOTE 2	
TEST METHOD										TEST METHOD										TEST METHOD	
FINAL PROTECTIVE FINISH										FINAL PROTECTIVE FINISH										FINAL PROTECTIVE FINISH	
APPLY PART NO.										APPLY PART NO.										APPLY PART NO.	
PART NO.										PART NO.										PART NO.	
APPLICATION										APPLICATION										APPLICATION	
PART NAME										PART NAME										PART NAME	
MATERIAL										MATERIAL										MATERIAL	
TOLERANCES										TOLERANCES										TOLERANCES	
FRACTIONS										FRACTIONS										FRACTIONS	
DECIMALS										DECIMALS										DECIMALS	
ANGLES										ANGLES										ANGLES	
MATERIAL										MATERIAL										MATERIAL	
NOTE 2										NOTE 2										NOTE 2	
TEST METHOD										TEST METHOD										TEST METHOD	
FINAL PROTECTIVE FINISH										FINAL PROTECTIVE FINISH										FINAL PROTECTIVE FINISH	
APPLY PART NO.										APPLY PART NO.										APPLY PART NO.	
PART NO.										PART NO.										PART NO.	
APPLICATION										APPLICATION										APPLICATION	
PART NAME										PART NAME										PART NAME	
MATERIAL										MATERIAL										MATERIAL	
TOLERANCES										TOLERANCES										TOLERANCES	
FRACTIONS										FRACTIONS										FRACTIONS	
DECIMALS										DECIMALS										DECIMALS	
ANGLES										ANGLES										ANGLES	
MATERIAL										MATERIAL										MATERIAL	
NOTE 2										NOTE 2										NOTE 2	
TEST METHOD										TEST METHOD										TEST METHOD	
FINAL PROTECTIVE FINISH										FINAL PROTECTIVE FINISH										FINAL PROTECTIVE FINISH	
APPLY PART NO.										APPLY PART NO.										APPLY PART NO.	
PART NO.										PART NO.										PART NO.	
APPLICATION										APPLICATION										APPLICATION	
PART NAME										PART NAME										PART NAME	
MATERIAL										MATERIAL										MATERIAL	
TOLERANCES										TOLERANCES										TOLERANCES	
FRACTIONS										FRACTIONS										FRACTIONS	
DECIMALS										DECIMALS										DECIMALS	
ANGLES										ANGLES										ANGLES	
MATERIAL										MATERIAL										MATERIAL	
NOTE 2										NOTE 2										NOTE 2	
TEST METHOD										TEST METHOD										TEST METHOD	
FINAL PROTECTIVE FINISH										FINAL PROTECTIVE FINISH										FINAL PROTECTIVE FINISH	
APPLY PART NO.										APPLY PART NO.										APPLY PART NO.	
PART NO.										PART NO.										PART NO.	
APPLICATION										APPLICATION										APPLICATION	
PART NAME										PART NAME										PART NAME	
MATERIAL										MATERIAL										MATERIAL	
TOLERANCES										TOLERANCES										TOLERANCES	
FRACTIONS										FRACTIONS										FRACTIONS	
DECIMALS										DECIMALS										DECIMALS	
ANGLES										ANGLES										ANGLES	
MATERIAL										MATERIAL										MATERIAL	
NOTE 2										NOTE 2										NOTE 2	
TEST METHOD										TEST METHOD										TEST METHOD	
FINAL PROTECTIVE FINISH										FINAL PROTECTIVE FINISH										FINAL PROTECTIVE FINISH	
APPLY PART NO.										APPLY PART NO.										APPLY PART NO.	
PART NO.										PART NO.										PART NO.	
APPLICATION										APPLICATION										APPLICATION	
PART NAME										PART NAME										PART NAME	
MATERIAL										MATERIAL										MATERIAL	
TOLERANCES										TOLERANCES										TOLERANCES	
FRACTIONS										FRACTIONS										FRACTIONS	
DECIMALS										DECIMALS										DECIMALS	
ANGLES										ANGLES										ANGLES	
MATERIAL										MATERIAL										MATERIAL	
NOTE 2										NOTE 2										NOTE 2	
TEST METHOD										TEST METHOD										TEST METHOD	
FINAL PROTECTIVE FINISH										FINAL PROTECTIVE FINISH										FINAL PROTECTIVE FINISH	
APPLY PART NO.										APPLY PART NO.										APPLY PART NO.	
PART NO.										PART NO.										PART NO.	
APPLICATION										APPLICATION										APPLICATION	
PART NAME										PART NAME										PART NAME	
MATERIAL										MATERIAL										MATERIAL	
TOLERANCES										TOLERANCES										TOLERANCES	
FRACTIONS										FRACTIONS										FRACTIONS	
DECIMALS										DECIMALS										DECIMALS	
ANGLES										ANGLES										ANGLES	
MATERIAL										MATERIAL										MATERIAL	
NOTE 2										NOTE 2										NOTE 2	
TEST METHOD										TEST METHOD										TEST METHOD	
FINAL PROTECTIVE FINISH										FINAL PROTECTIVE FINISH										FINAL PROTECTIVE FINISH	
APPLY PART NO.										APPLY PART NO.										APPLY	



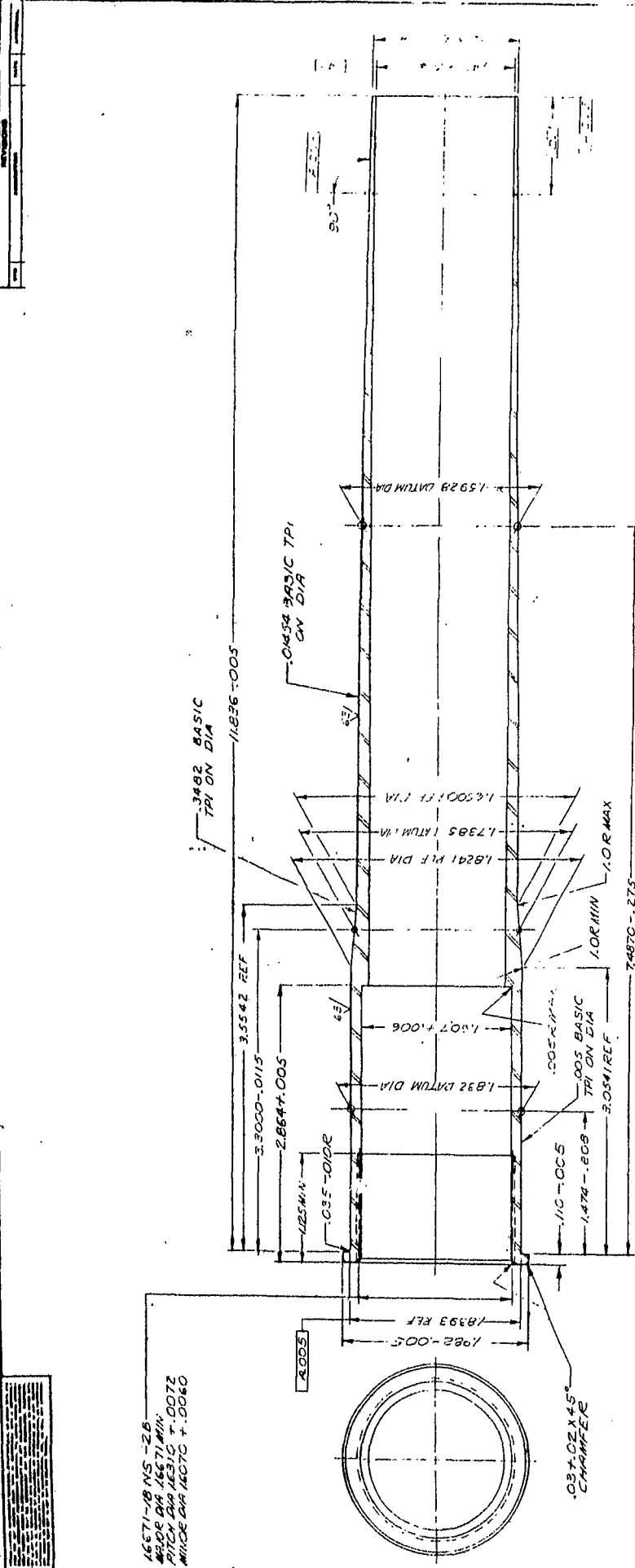
1. SPECIFICATIONS MIL-G-2550, MIL-STD-8, MIL-STD-10 AND LCA-PD-... APPLY.
2. MATERIAL - STEEL, BAR, COLD-FINISHED, GRADES 1030 TO 1040 EXCEPT THERMALLY TREATED GRADES, ASTM SPEC A108. GRAIN SIZE 5-8 PER ASTM SPEC E19.
3. ZINC PLATE; CLASS 3, TYPE II, BRASS COLOR, SPEC QQ-Z-325. BAKE AT 375° F FOR 3 HOURS IMMEDIATELY AFTER PLATING.
4. SHAPE OF ENTRANCE TO PRIMER POCKET MAY VARY PROVIDED ALL SURFACES BLEND SMOOTHLY WITH EACH OTHER AND WITH PRIMER POCKET SIDEWALL AND BASE OF CASE PLUG. ALL SURFACES MUST BE WITHIN THE ZONE FORMED BY A .030 R-.010, TANGENT TO PRIMER POCKET SIDEWALL AND BASE OF CASE PLUG.
5. THREAD TRACES PERMITTED IN THIS AREA.

DETAIL "A"
SCALE :- 50/1

NOTICE THIS DRAWING SHALL NOT BE USED
 NOR REPRODUCED EITHER WHOLLY OR IN PART
 EXCEPT WHEN AUTHORIZED IN CONNECTION WITH
 UNITED STATES GOVERNMENT PROCUREMENT.

ORDNANCE CORPS DEPT OF THE ARMY LAKE CITY ARSENAL INDEPENDENCE, MISSOURI		C LCA-SK-428	
CASE PLUG (SHORT RANGE)		FOR P.A. CASE AA-44-1666	
ORIGINAL DATE JUL 5 1961		SCALE 2/1	
UNLESS OTHERWISE SPECIFIED		UNIT WT	
CONFORMANCES WITH		APPROVED BY	
TOLERANCES UNLESS OTHERWISE SPECIFIED		UNAPPROVED BY	
MATERIAL		NOTE 3	
NOTE 2		NOTE 3	
NOTE 3		NOTE 3	
NOTE 4		NOTE 3	
NOTE 5		NOTE 3	
NOTE 6		NOTE 3	
NOTE 7		NOTE 3	
NOTE 8		NOTE 3	
NOTE 9		NOTE 3	
NOTE 10		NOTE 3	
NOTE 11		NOTE 3	
NOTE 12		NOTE 3	
NOTE 13		NOTE 3	
NOTE 14		NOTE 3	
NOTE 15		NOTE 3	
NOTE 16		NOTE 3	
NOTE 17		NOTE 3	
NOTE 18		NOTE 3	
NOTE 19		NOTE 3	
NOTE 20		NOTE 3	
NOTE 21		NOTE 3	
NOTE 22		NOTE 3	
NOTE 23		NOTE 3	
NOTE 24		NOTE 3	
NOTE 25		NOTE 3	
NOTE 26		NOTE 3	
NOTE 27		NOTE 3	
NOTE 28		NOTE 3	
NOTE 29		NOTE 3	
NOTE 30		NOTE 3	
NOTE 31		NOTE 3	
NOTE 32		NOTE 3	
NOTE 33		NOTE 3	
NOTE 34		NOTE 3	
NOTE 35		NOTE 3	
NOTE 36		NOTE 3	
NOTE 37		NOTE 3	
NOTE 38		NOTE 3	
NOTE 39		NOTE 3	
NOTE 40		NOTE 3	
NOTE 41		NOTE 3	
NOTE 42		NOTE 3	
NOTE 43		NOTE 3	
NOTE 44		NOTE 3	
NOTE 45		NOTE 3	
NOTE 46		NOTE 3	
NOTE 47		NOTE 3	
NOTE 48		NOTE 3	
NOTE 49		NOTE 3	
NOTE 50		NOTE 3	
NOTE 51		NOTE 3	
NOTE 52		NOTE 3	
NOTE 53		NOTE 3	
NOTE 54		NOTE 3	
NOTE 55		NOTE 3	
NOTE 56		NOTE 3	
NOTE 57		NOTE 3	
NOTE 58		NOTE 3	
NOTE 59		NOTE 3	
NOTE 60		NOTE 3	
NOTE 61		NOTE 3	
NOTE 62		NOTE 3	
NOTE 63		NOTE 3	
NOTE 64		NOTE 3	
NOTE 65		NOTE 3	
NOTE 66		NOTE 3	
NOTE 67		NOTE 3	
NOTE 68		NOTE 3	
NOTE 69		NOTE 3	
NOTE 70		NOTE 3	
NOTE 71		NOTE 3	
NOTE 72		NOTE 3	
NOTE 73		NOTE 3	
NOTE 74		NOTE 3	
NOTE 75		NOTE 3	
NOTE 76		NOTE 3	
NOTE 77		NOTE 3	
NOTE 78		NOTE 3	
NOTE 79		NOTE 3	
NOTE 80		NOTE 3	
NOTE 81		NOTE 3	
NOTE 82		NOTE 3	
NOTE 83		NOTE 3	
NOTE 84		NOTE 3	
NOTE 85		NOTE 3	
NOTE 86		NOTE 3	
NOTE 87		NOTE 3	
NOTE 88		NOTE 3	
NOTE 89		NOTE 3	
NOTE 90		NOTE 3	
NOTE 91		NOTE 3	
NOTE 92		NOTE 3	
NOTE 93		NOTE 3	
NOTE 94		NOTE 3	
NOTE 95		NOTE 3	
NOTE 96		NOTE 3	
NOTE 97		NOTE 3	
NOTE 98		NOTE 3	
NOTE 99		NOTE 3	
NOTE 100		NOTE 3	
NOTE 101		NOTE 3	
NOTE 102		NOTE 3	
NOTE 103		NOTE 3	
NOTE 104		NOTE 3	
NOTE 105		NOTE 3	
NOTE 106		NOTE 3	
NOTE 107		NOTE 3	
NOTE 108		NOTE 3	
NOTE 109		NOTE 3	
NOTE 110		NOTE 3	
NOTE 111		NOTE 3	
NOTE 112		NOTE 3	
NOTE 113		NOTE 3	
NOTE 114		NOTE 3	
NOTE 115		NOTE 3	
NOTE 116		NOTE 3	
NOTE 117		NOTE 3	
NOTE 118		NOTE 3	
NOTE 119		NOTE 3	
NOTE 120			

D AA-44-1566



NOTES:-
 1- SPEC MIL-G-2550, MIL-STD-B-14, MIL-STD-9, MIL-STD-10 AND DIMS 30-1-7 APPLY.
 2- MATERIAL IS STEEL, TYPE 304, SEAMLESS, HOT-FINISHED. (SEE NOTE 5)
 3- ALL DIMS EXCEPT AS NOTED
 4- PROTECTIVE FINISH - FIN 54, NC 18.3.3 OF MIL-STD-17, NOTE 1
 5- APPROVED SOURCE - B. J. J. CO., INC., 1833 S. 1ST AVE., MILWAUKEE, WIS. (SEE NOTE 1)
 6- THE SOURCE MUST COMPLY WITH THE REQUIREMENTS OF THE MANUFACTURERS
 7- ALTERNATIVE FINISH - FINISH NO. 11.2.5 OF MIL-STD-17.

ORDNANCE CORPS DEPT OF THE ARMY		SCALE 2:1	
10		DATE	
DRAWN BY		CHECKED BY	
DESIGNED BY		APPROVED BY	
MATERIAL		FINISH	
TOLERANCES		SURFACE FINISH	
THREADS		CHAMFERS	
KEYS		OTHER	
SEE NOTE 2		SEE NOTE 2	
MIL-STD-17		MIL-STD-17	

VII. APPENDIX B

References

APPENDIX B (1)
ORDNANCE CORPS
PICATINNY ARSENAL
DOVER, NEW JERSEY

IE
Mr RDecker/vjt/72205

IN REPLY
REFER TO:

APR 7 '61

ORDBB -TW4

SUBJECT: Cartridge, XM415E3.

THE ORIGINAL DOCUMENT WAS OF POOR
QUALITY. BEST POSSIBLE REPRODUCTION
FROM COPY FURNISHED ASTIA.

TO: Commanding Officer
Lake City Arsenal
ATTN: ORDCM-IE, Mr. J. Piskorski
Independence, Missouri

1. It is requested that your Arsenal conduct a production engineering study of subject Cartridge and recommend any changes leading to reduction of manufacturing costs, broadening of supply base, improving reproducibility, or reduction of acceptance inspection costs while maintaining high assurance of conformance to design. Monthly reports, due at this Arsenal by the 5th. day following the reporting period, and a final report, due by 30 June 1961, are required with the study.

2. A set of photo prints covering subject Cartridge was furnished to Mr. F. W. Littleford, of your Arsenal, on 16 March 1961.

3. Funding of \$6,000.00 is being forwarded to your Arsenal for the above study.

FOR THE COMMANDER:

cc: Ord Wpns Comd
ATTN: Major Rodgers

D. Trevor Brow
D. TREVOR BROW
Deputy Director
for Army Ammunition

WORK ORDER

1. TO: Ordnance Ammo Command (Lake City Arsenal) ORDLI-AM		2. TO:		3. DATE 11 April 61
FROM: Commanding Officer Picatinny Arsenal, Dover, N.J.		FROM:		4. DOCUMENT CONT. NUMBER 1.02.024.010.010.0
5. OMS CODE AND TITLE 4010.15.0033.2.00.54 XM28 and XM29 Weapons System	7. ELEMENTS	A. QUANTITY UNIT:	B. UNIT PRICE	C. TOTAL COST
	PRIOR			10,000
	INCREASE			6,000
	DECREASE			
6. APPROPRIATE ACCOUNTING CLASS. OF FUNDS (TO BE) MADE AVAILABLE 21 X2030 105-3115 P4011 S/23-012	CURRENT			16,000
	TOLERANCE			
	8. PERFORMANCE OF THE FOLLOWING WORK IS AUTHORIZED (SUBJECT TO AVAILABILITY OF FUNDS) The purpose of this AOS-20 is to provide additional authority for the following. To conduct production engineering study on Cartridge XM415E3. Reference: Letter from PA to LCA dated 7 Apr 61. Subject: Cartridge XM415E3, signed D. Trevarrow. THE ORIGINAL DOCUMENT WAS OF POOR QUALITY. BEST POSSIBLE REPRODUCTION FROM COPY FURNISHED ASTIA.			
9. DELIVERY SCHEDULE AND INSTRUCTIONS Activity of this order must be initiated on or before 17 April 1961 and all activity must be completed on or before 30 June 1961.				
10. ENCLOSURES None				
FOR USE BY ADDRESSEE		11. AUTHORIZED BY		
12. CONTRACT ACTIONS A. DATE B. NUMBER C. AMOUNT		ORDBB-TP-2 E. Ruben 13 April 1961 TYPED NAME & TITLE SIGNATURE AND DATE		

VII. APPENDIX C

DISTRIBUTION LIST

Copies

Chief of Ordnance
Department of the Army
ATTN: ORDIM Dellastatious
ORDTS Thulin
Washington 25, D.C.

1
1

Commanding Officer
Picatinny Arsenal
ATTN: ORDBB-TW4 Roof
ORDBB Trevorrow
ORDBB-DC
Dover, New Jersey

2
2
2

Commanding Officer
Ordnance Ammunition Command
ATTN: ORDLY-AIDL, Quality Assurance Library
Joliet, Illinois

2

Commanding General
Ordnance Weapons Command
Rock Island, Illinois

2

Commanding Officer
Frankford Arsenal
ATTN: Library Services 0270
Philadelphia 37, Pa.

2

Commanding General
Aberdeen Proving Ground
ATTN: Mr. Goodwin Morrow
Technical Library
Maryland

1
1

Bureau of Ordnance
Department of the Navy
ATTN: RMMO-45
Washington 25, D. C.

1

Commander
Naval Ordnance Laboratory
ATTN: Technical Library
Silver Springs, Maryland

1

VII. APPENDIX C
DISTRIBUTION LIST (Continued)

• Copies •

Armed Services Technical Information Agency
TIPCA
Arlington Hall Station
Arlington 12, Virginia

10

Commanding Officer
Lake City Arsenal
ATTN: Remington Arms Company, Inc.
Chief, Oper Rev Div
Master File

2

1

5