

2 . 2



LIBRARY  
International Reference Centre  
for Community Water Supply



**KINGDOM OF THAILAND**  
**MINISTRY OF INTERIOR**  
**ACCELERATED RURAL DEVELOPMENT OFFICE**  
**EQUIPMENT CONTROL DIVISION**

**AND PUMP IMPROVEMENT FOR THAILAND RURAL AREA**  
**Vol. II**

**HAND PUMP DETAILS DRAWING**  
**DEPARTMENT OF MINERAL RESOURCES**  
**&**  
**DEPARTMENT OF PUBLIC WORKS TYPES**

232.2 HA-II

616 II  
232.2  
HA

KINGDOM OF THAILAND  
MINISTRY OF INTERIOR  
ACCELERATED RURAL DEVELOPMENT OFFICE  
EQUIPMENT CONTROL DIVISION

HAND PUMP IMPROVEMENT FOR THAILAND RURAL AREA

VOL. II

HAND PUMP DETAILS DRAWING  
DEPARTMENT OF MINERAL RESOURCES

&

DEPARTMENT OF PUBLIC WORKS TYPES

LIBRARY  
International Reference Centre  
for Community Water Supply

## CONTENTS

PART I HAND PUMP DETAILS DRAWING

DEPARTMENT OF MINERAL RESOURCES TYPE

PART II HAND PUMP DETAILS DRAWING

DEPARTMENT OF PUBLIC WORKS TYPE

**PART I**

TYPE OF HAND PUMP

DEPARTMENT OF MINERAL RESOURCES

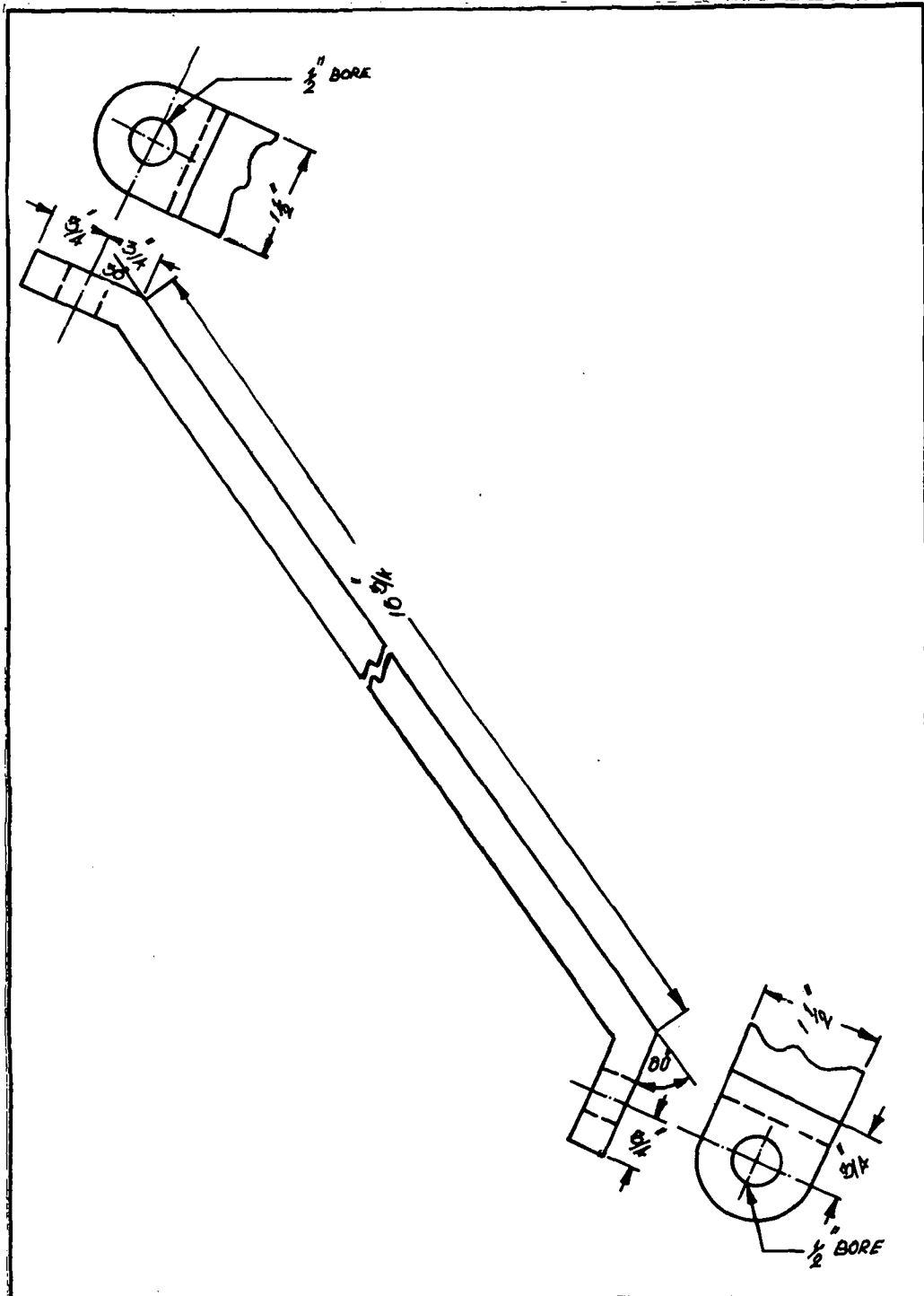
PART NO.	PART NAME	QUAN.	MATERIAL	DRAWING NO.
1	Pump body	1	Cast iron	01-01
2	Brace	1	Steel	01-02
3	Bushing reducer	1	Gulv. steel	01-01
4	Sq. hd. plug	1	Gulv. steel	01-01
5	Base Plate	1	Sheet steel	01-03
6	Plain spout	1	Cast iron	01-04
7	Cock spout	1	Cast iron	01-05
8	Cap screw	3	Standard	01-01
9	Sq. hd. plug	1	Gulv. steel	01-01
10	Bolt & nut	9	Standard	01-01
11	Spout gasket	1	Rubber	01-06
12	Pump top gasket	1	Leather	01-07
13	Pump top	1	Cast iron	01-08
14	Stuffing box	1	Cast iron	01-09
15	Stuffing nut	1	Brass	01-10
16	Piston rod	1	Cold drawn steel	01-11
17	Flat bar	1	Steel	01-12
18	Fulcrum link	1	Cast iron	01-13
19	Guide flat bar bushing	1	Cast iron	01-14
20	Bottom fulcrum pin	1	Cold drawn steel	01-15
21	Top fulcrum pin	1	Cold drawn steel	01-16
22	Eye pump pin	1	Cold drawn steel	01-17
23	Cotter pin	6	Standard	-
24	Stuffing box packing	1 ft	Graphite-greased	-
25	Cyl. reducing coupling	1	Cold drawn steel	01-18
26	Pump handle	1	Cast iron	01-19, 01-20
27	Cylinder shell	1	Brass	01-21
28	Top cap	1	Brass	01-22
29	Bottom cap & inlet valve seat	1	Brass	01-23
30	Inlet valve housing	1	Brass	01-24
31	Inlet valve	1	Brass	01-25
32	Inlet valve lining	1	Leather	01-26
33	Plain washer	1	Brass	-

TYPE OF HAND PUMP

DEPARTMENT OF MINERAL RESOURCES

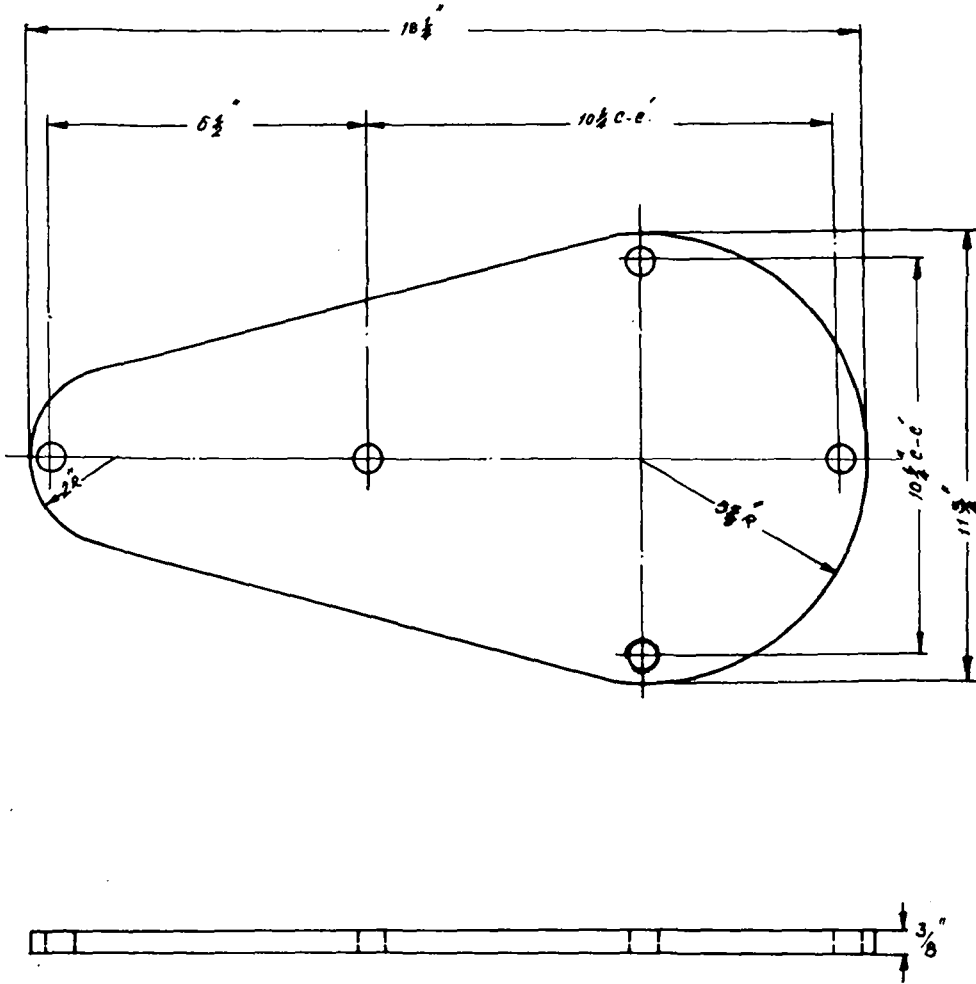
PART NO.	PART NAME	QUAN.	MATERIAL	DRAWING NO.
34	Hex. nut	1	Brass	01-27
35	Wire spring	1	Brass	01-28
36	Plunger follower	1	Brass	01-29
37	Plunger cup spacer	1	Brass	01-30
38	Plunger valve	1	Brass	01-31
39	Plunger cup	2	Leather	01-32
40	Plunger cage	1	Brass	01-33
41	Plunger rod	1	Cold drawn steel	01-34
42	Hex. nut	1	Brass	01-35
43	Cylinder gasket	2	Leather	-
44	Hex. coupling	1	Steel	01-36



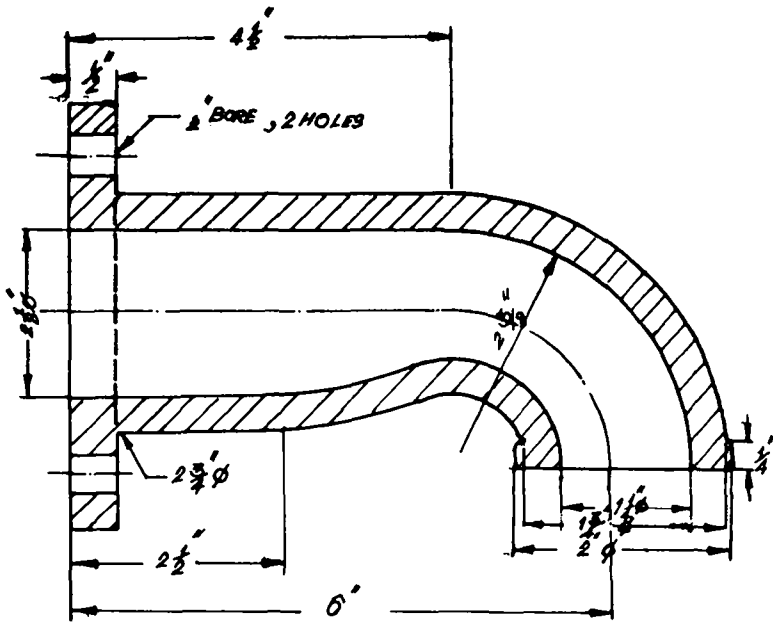


TYPE	DEPARTMENT OF MINERAL RESOURCES		
DRAWING NO.	01 - 02	PART NO.	2
PART NAME	BRACE	MATERIAL	CAST IRON
SCALE	1 : 2	DRAWN BY	<i>Tanda [Signature]</i>

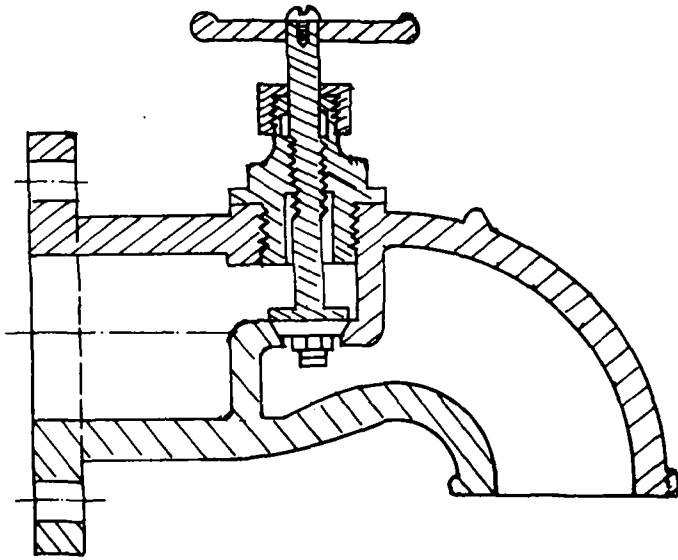




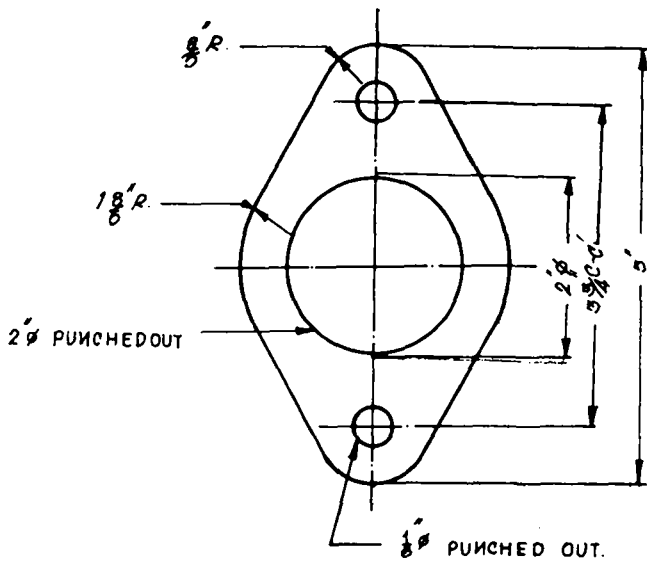
TYPE	DEPARTMENT OF MINERAL RESOURCES		
DRAWING NO.	01 - 03	PART NO.	5
PART NAME	BASE PLATE	MATERIAL	SHFET STEFL
SCALE	1 : 4	DRAWN BY	<i>Tomás J. Romo</i>



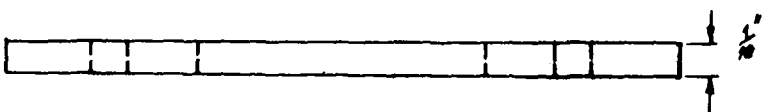
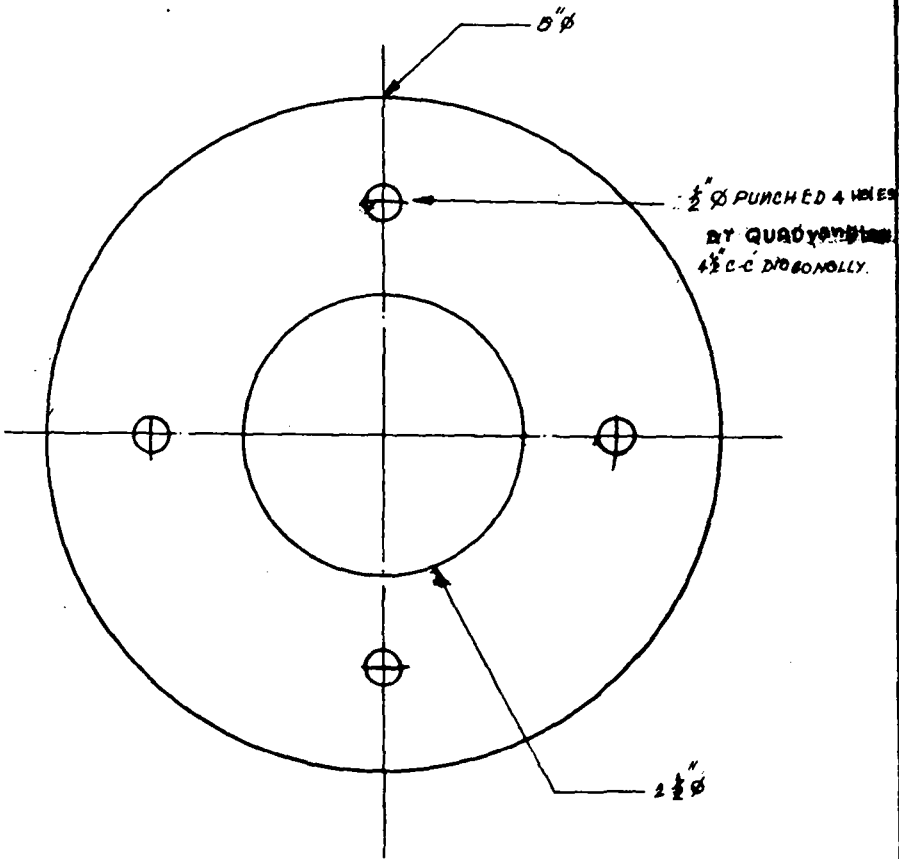
TYPE	DEPARTMENT OF MINERAL RESOURCES		
DRAWING NO.	01 - 04	PART NO.	6
PART NAME	PLAIN SPOUT	MATERIAL	CAST IRON
SCALE	1 : 2	DRAWN BY	<i>Tomoko Morris</i>



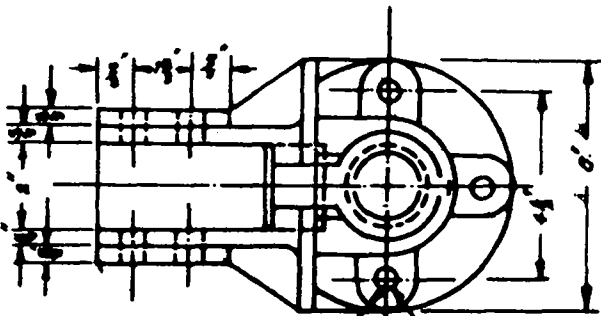
TYPE	DEPARTMENT OF MINERAL RESOURCES		
DRAWING NO.	01 - 05	PART NO.	7
PART NAME	COCK SPOUT	MATERIAL	CAST IRON
SCALE	1 : 2	DRAWN BY	<i>Frank J. ...</i>



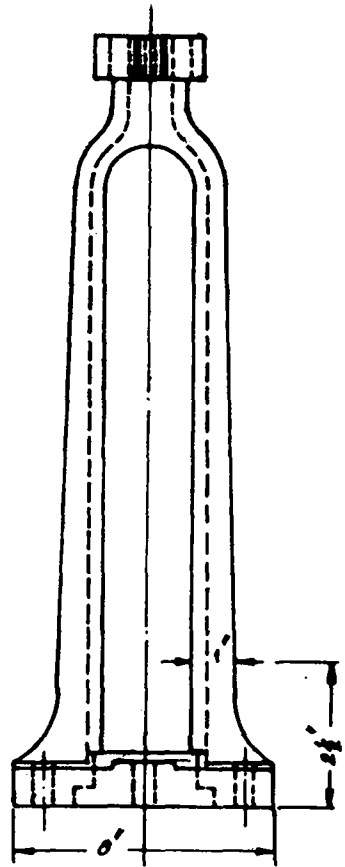
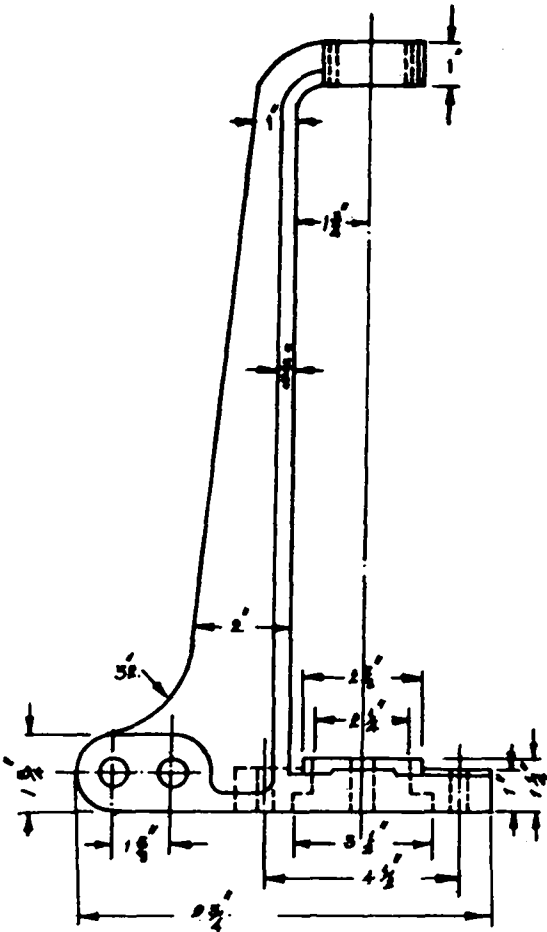
TYPE	DEPARTMENT OF MINERAL RESOURCES		
DRAWING NO.	01 - 06	PART NO.	11
PART NAME	SPOUT GASKET	MATERIAL	RUBBER
SCALE	1 : 2	DRAWN BY	<i>Frank A. ...</i>



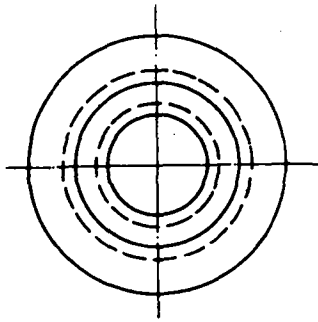
TYPE	DEPARTMENT OF MINERAL RESOURCES		
DRAWING NO.	01 - 07	PART NO.	12
PART NAME	PUMP TOP GASKET		
SCALE	1 : 3	MATERIAL	LEATHER



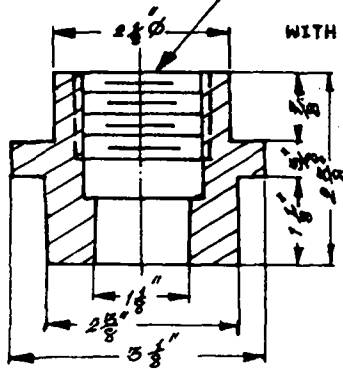
1 1/2" BORE, 4 HOLES AT SQUARE.



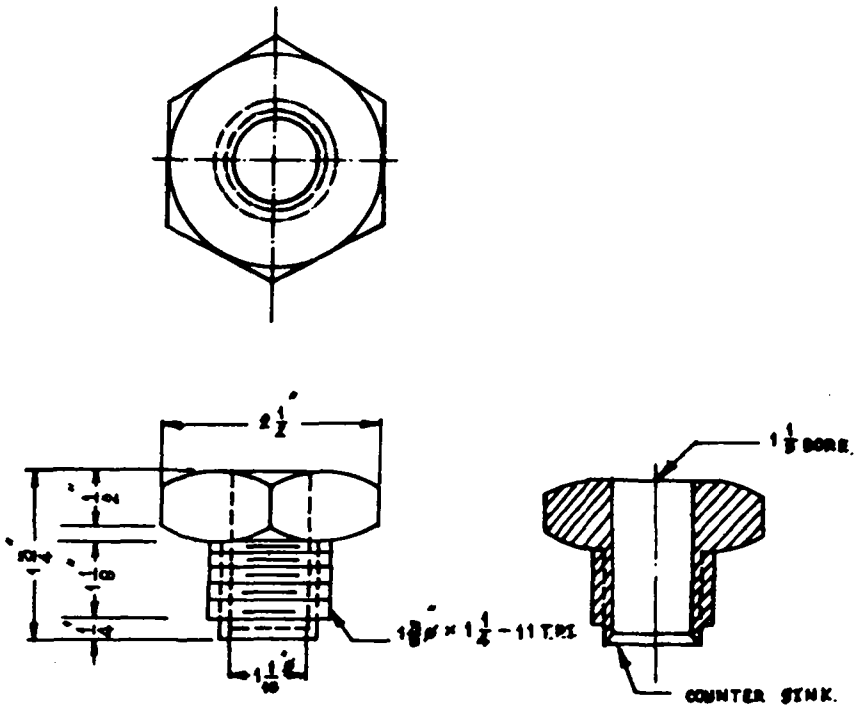
TYPE	DEPARTMENT OF MINERAL RESOURCES		
DRAWING NO.	01 - 08	PART NO.	13
PART NAME	PUMP TOP	MATERIAL	CAST IRON
SCALE	1 : 4	DRAWN BY	<i>Tosah N. ...</i>



BORED & TREADED FOR  $1 \frac{1}{8} \phi$   
 11 T.P.I. STUFFING NUT  $1''$  DEEP.  
 WITH  $\frac{3}{8}''$  AT BOTTOM UNTAPPED.

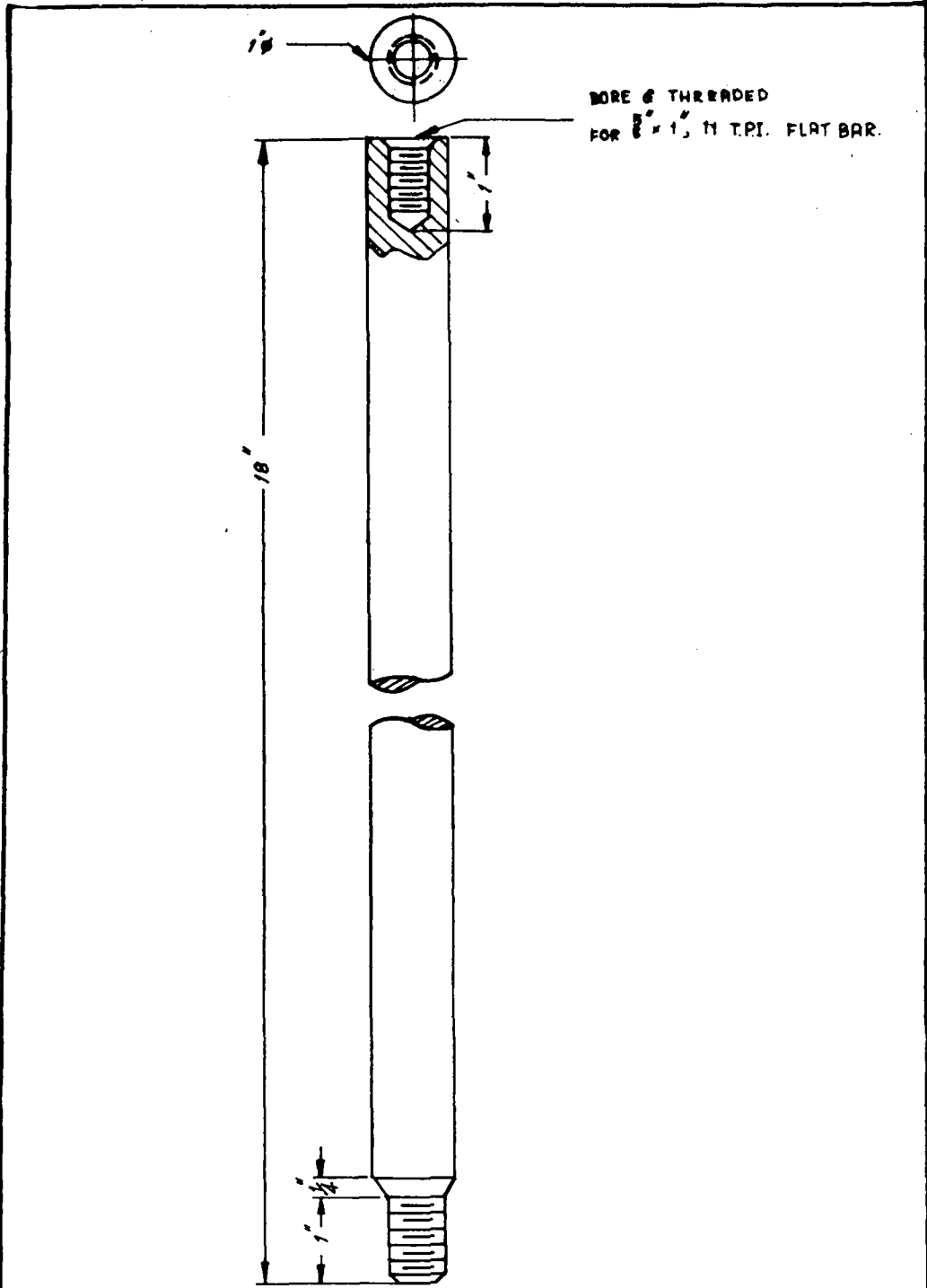


TYPE	DEPARTMENT OF MINERAL RESOURCES		
DRAWING NO.	01 - 09	PART NO.	14
PART NAME	STUFFING BOX.	MATERIAL	CAST IRON
SCALE	1 : 2	DRAWN BY	<i>Frank J. ...</i>

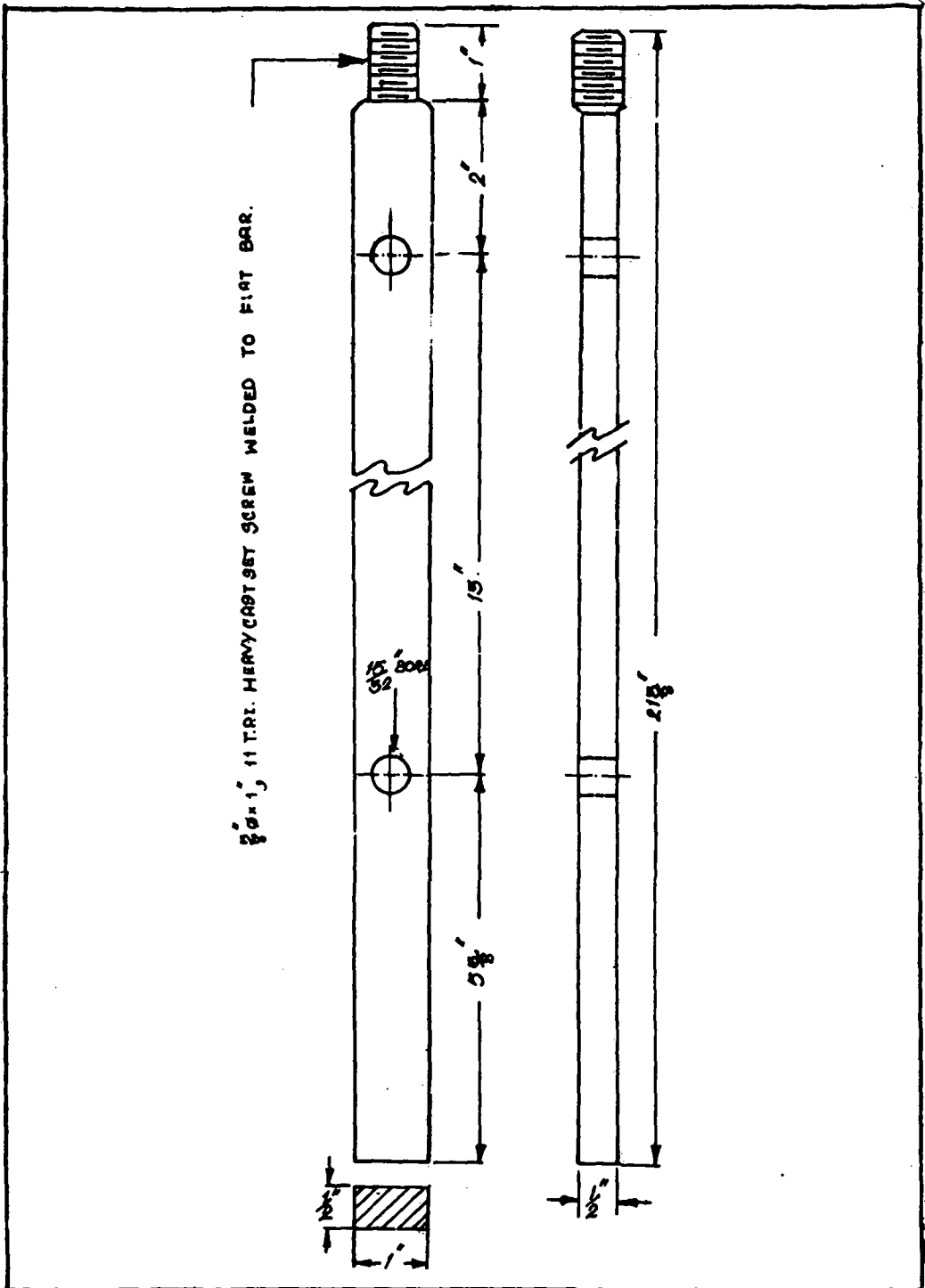


TYPE	DEPARTMENT OF MINERAL RESOURCES		
DRAWING NO.	01 - 40	PART NO.	15
PART NAME	STIFFING NUT	MATERIAL	BRASS
SCALE	1 : 2	DRAWN BY	<i>Wanda Joseph</i>

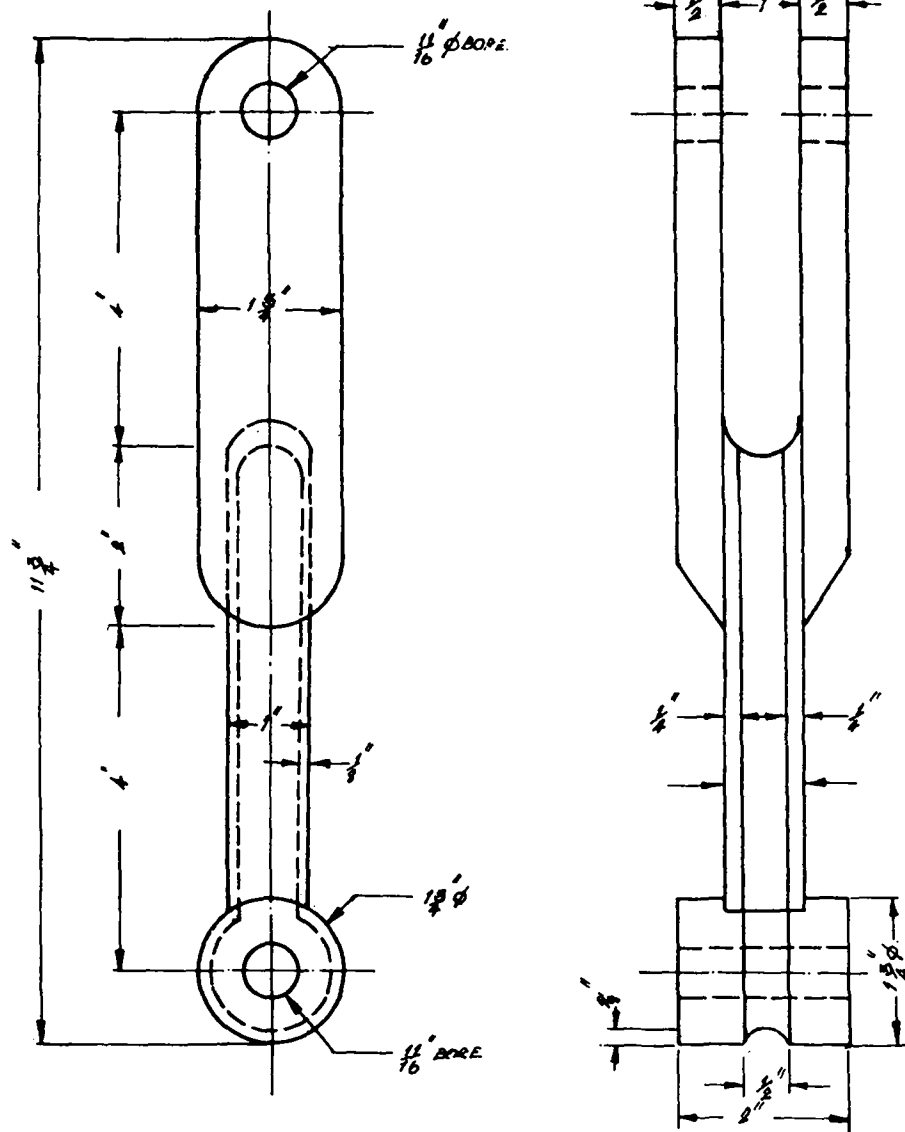




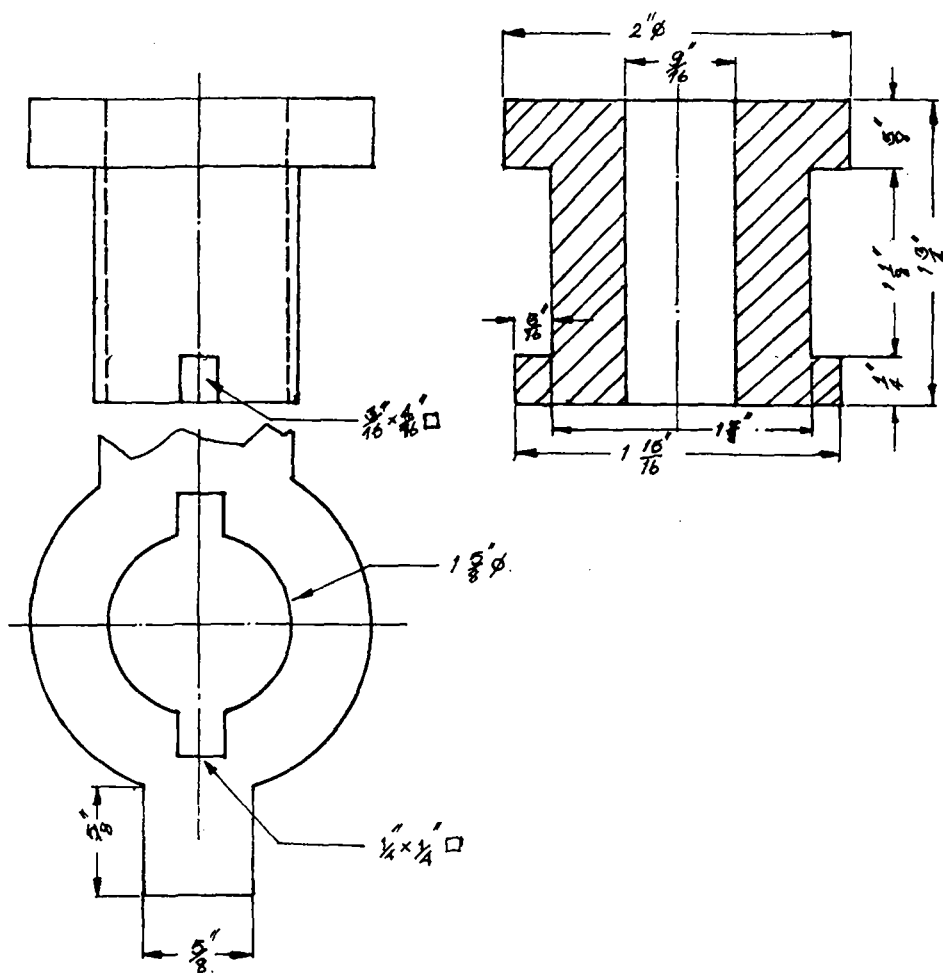
TYPE	DEPARTMENT OF MINERAL RESOURCES		
DRAWING NO.	01 - 11	PART NO.	16
PART NAME	PISTON ROD	MATERIAL	COLD DRAWN STEEL
SCALE	1 : 2	DRAWN BY	<i>Frank J. ...</i>



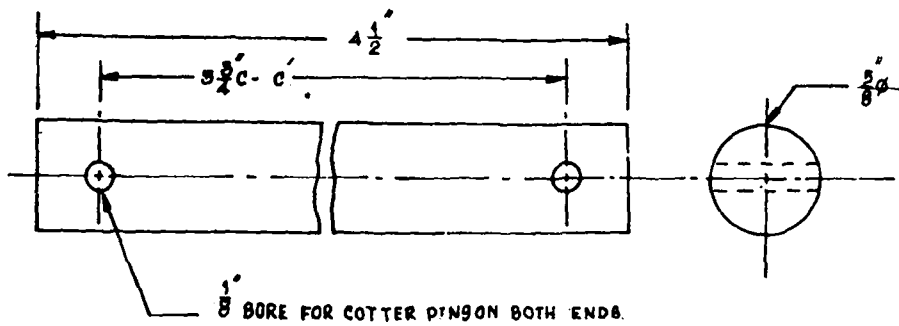
TYPE	DEPARTMENT OF MINERAL RESOURCES		
DRAWING NO.	01 - 12	PART NO.	17
PART NAME	FLAT BAR	MATERIAL	STEEL
SCALE	1 : 2	DRAWN BY	<i>Frank [Signature]</i>



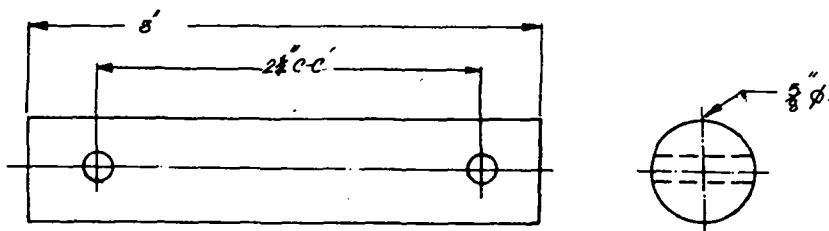
TYPE	DEPARTMENT OF MINERAL RESOURCES		
DRAWING NO.	01 - 13	PART NO.	18
PART NAME	FULCRUM LINK	MATERIAL	CAST IRON
SCALE	1 : 2	DRAWN BY	<i>Frank J. [Signature]</i>



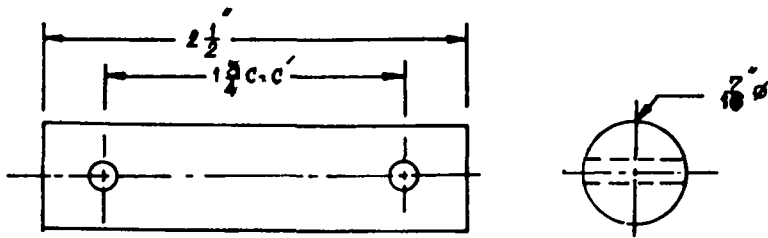
TYPE	DEPARTMENT OF MINERAL RESOURCES		
DRAWING NO.	01 - 14	PART NO.	19
PART NAME	GUIDE FLAT BAR BUSHING		
SCALE	1 : 1	MATERIAL	CAST IRON



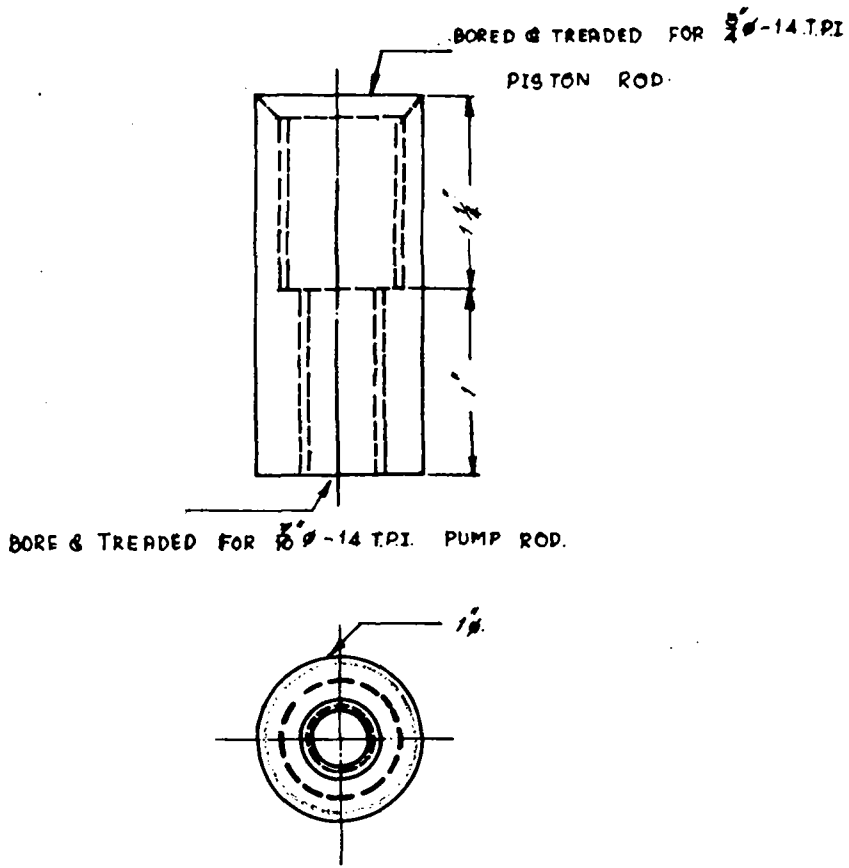
TYPE	DEPARTMENT OF MINERAL RESOURCES		
DRAWING NO.	01 - 15	PART NO.	20
PART NAME	BOTTOM FULCRUM PIN		
SCALE	1 : 1	MATERIAL	COLD DRAWN STEEL



TYPE	DEPARTMENT OF MINERAL RESOURCES		
DRAWING NO.	01 - 16	PART NO.	21
PART NAME	TOP FULCRUM	PIN	
SCALE	1 : 1	MATERIAL	BRASS

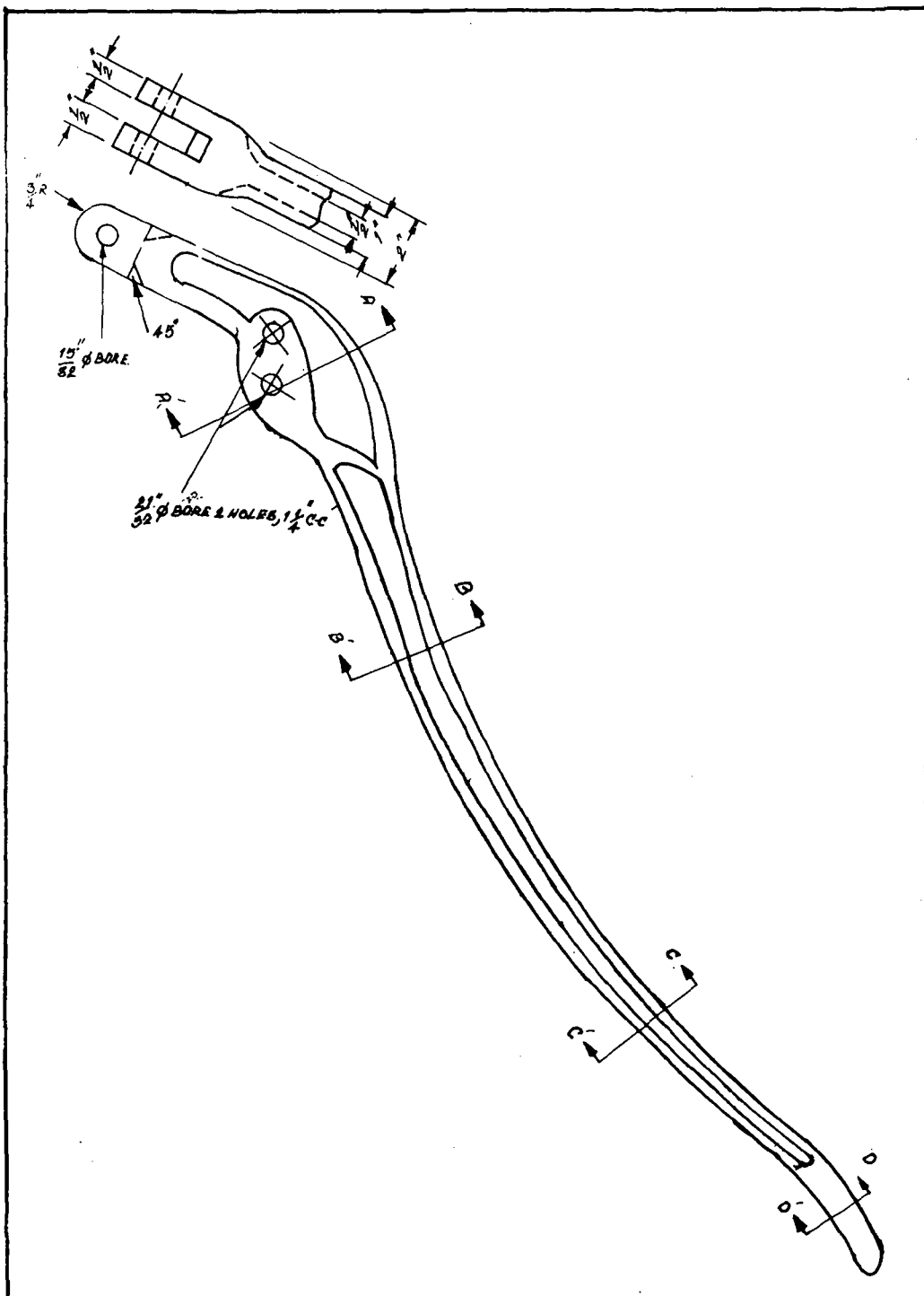


TYPE	DEPARTMENT OF MINERAL RESOURCES		
DRAWING NO.	01 - 17	PART NO.	22
PART NAME	EYE PUMP PIN	MATERIAL	COLD DRAWN STEEL
SCALE	1 : 1	DRAWN BY	<i>W. W. W. W.</i>

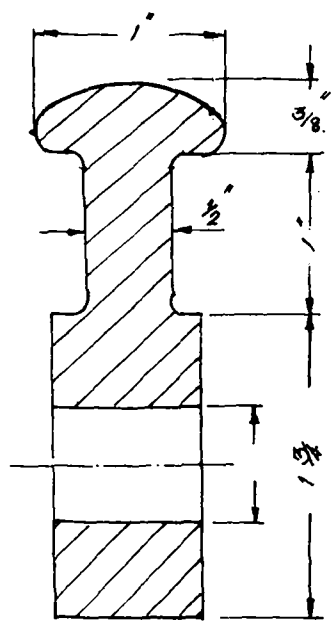


TYPE	DEPARTMENT OF MINERAL RESOURCES		
DRAWING NO.	01 - 18	PART NO.	25
PART NAME	CYLINDRICAL REDUCING COUPLING		
SCALE	1 : 1	MATERIAL	COLD DRAWN STEEL

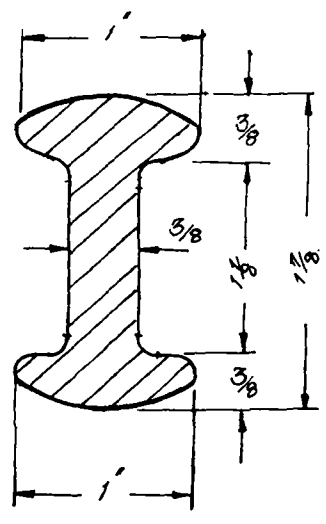




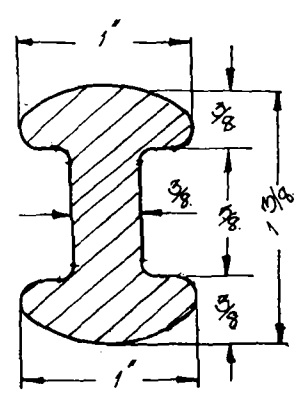
TYPE	DEPARTMENT OF MINERAL RESOURCES		
DRAWING NO.	01 - 19	PART NO.	26
PART NAME	PUMP HANDLE	MATERIAL	CAST IRON
SCALE	1 : 4	DRAWN BY	<i>Frank Pinto</i>



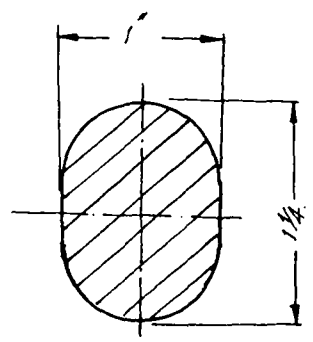
SECTION A-A'



SECTION B-B'

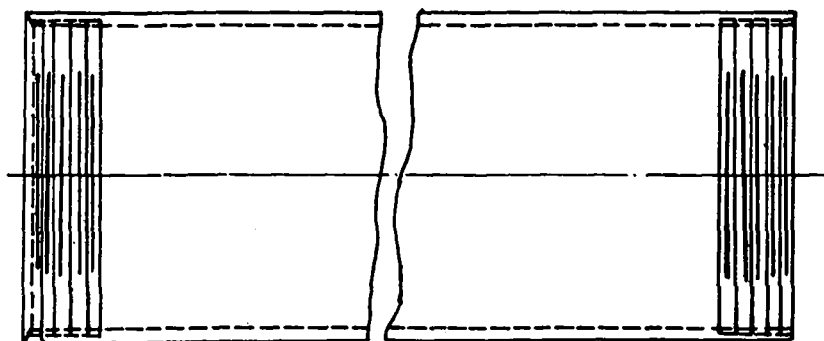
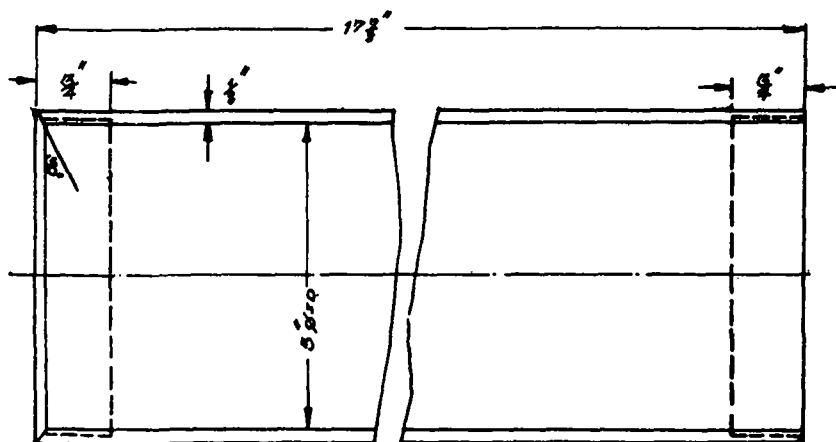


SECTION C-C'



SECTION D-D'

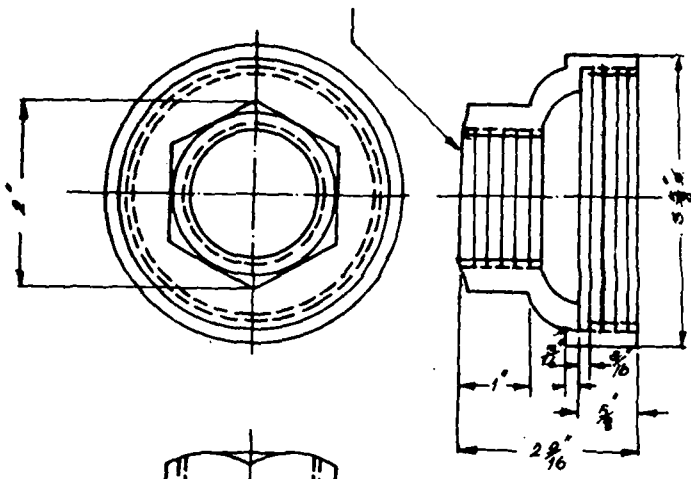
TYPE	DEPARTMENT OF MINERAL RESOURCES		
DRAWING NO.	01 - 20	PART NO.	26 (CROSS SECTIONS)
PART NAME	PUMPHANDLE	MATERIAL	CAST IRON
SCALE	1 : 1	DRAWN BY	<i>Frank F. ...</i>



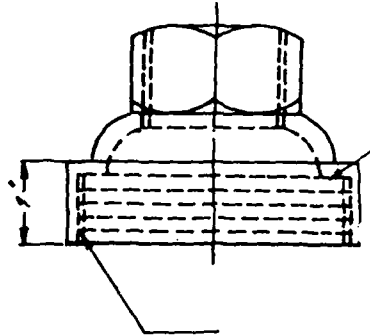
5/8"  $\phi$   $\times$  3/8" T.R.I. BOTH ENDS

TYPE	DEPARTMENT OF MINERAL RESOURCES		
DRAWING NO.	01 - 21	PART NO.	27
PART NAME	CYL. SHELL	MATERIAL	BRASS
SCALE	1 : 2	DRAWN BY	<i>David J. ...</i>

BORED & THREADED FOR 1 1/4" BS PIPE.



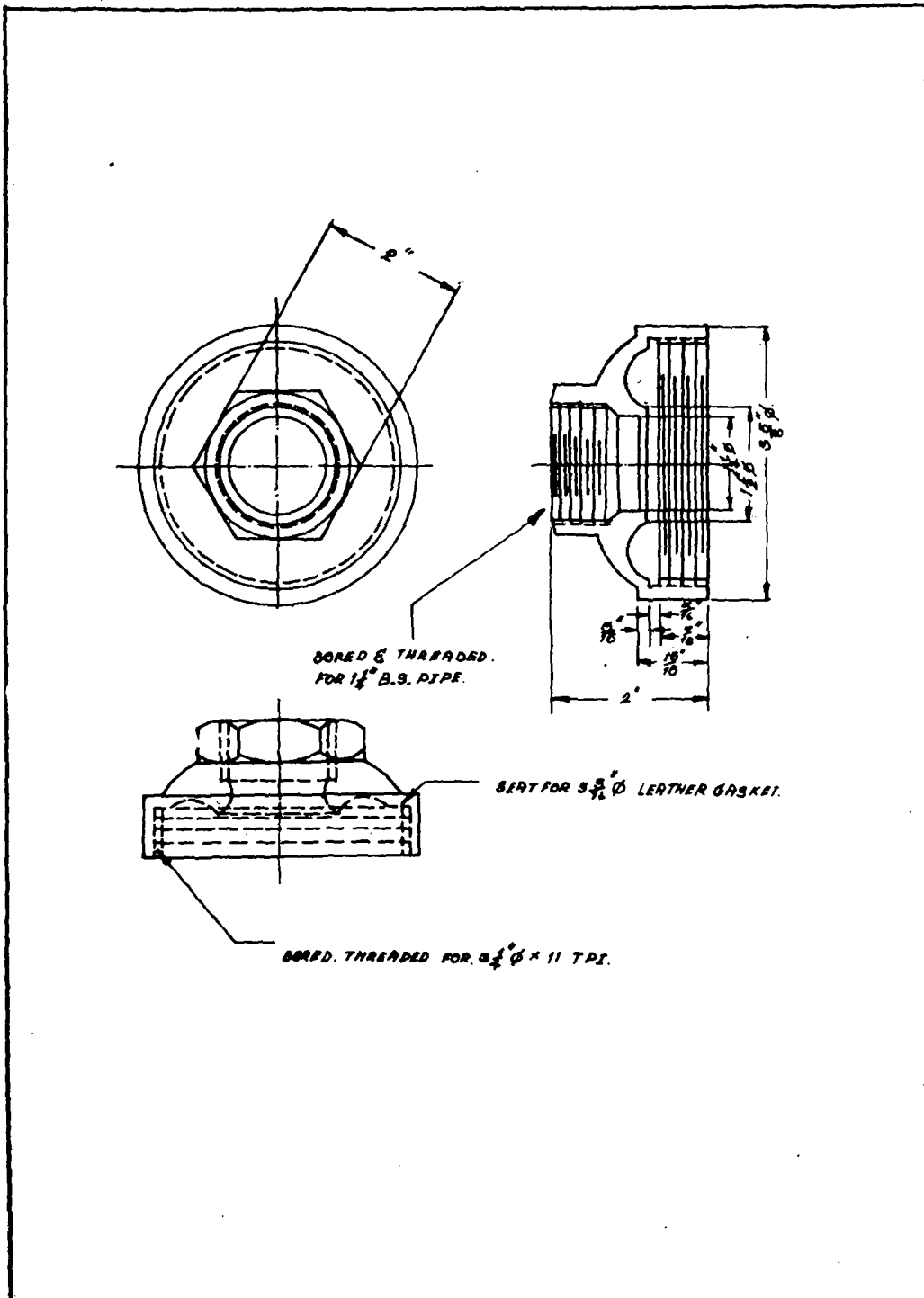
SEAT FOR 3 3/8" LEATHER GASKET.



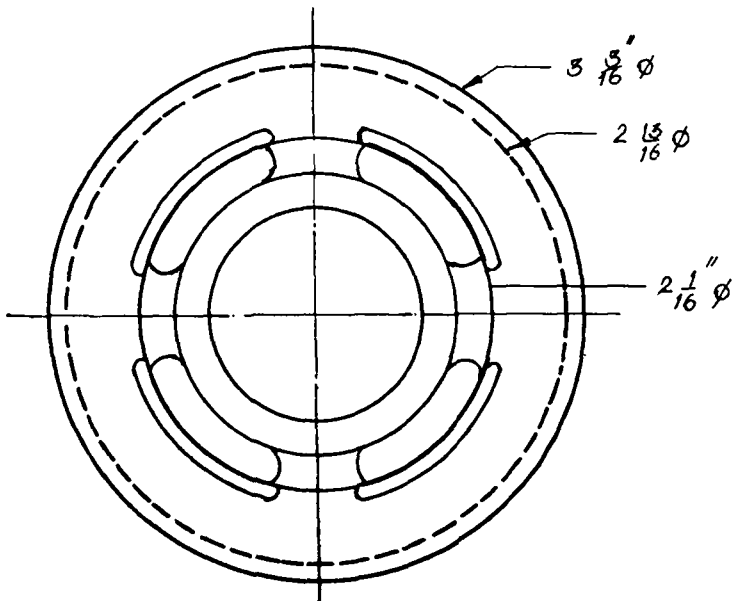
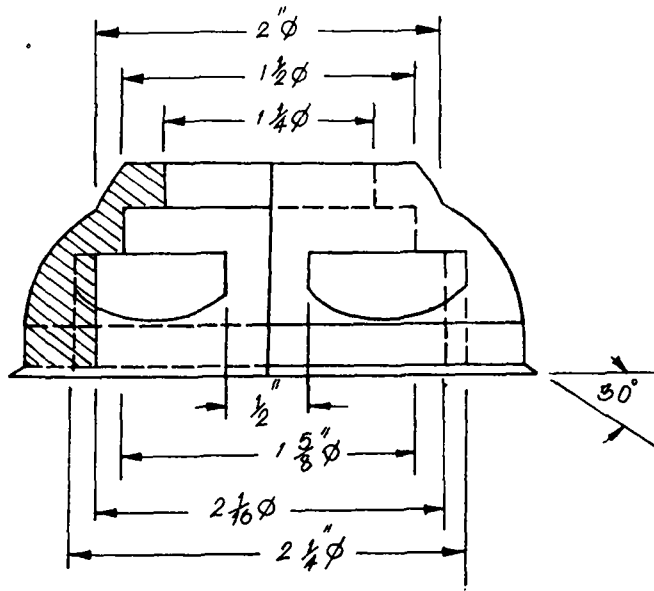
BORED & THREADED FOR 3/4" - 11 TPI.

-FREE FIT.

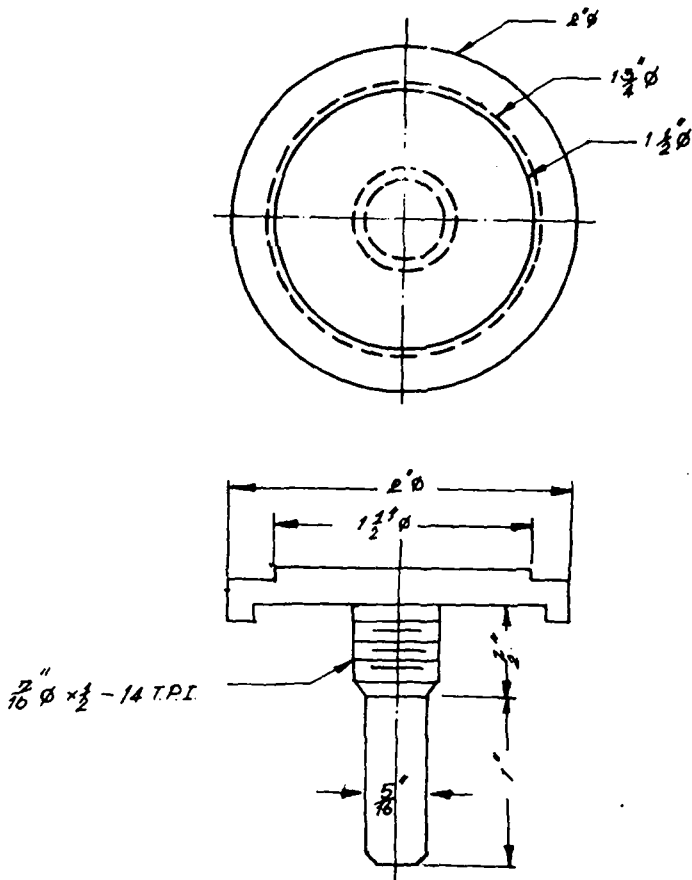
TYPE	DEPARTMENT OF MINERAL RESOURCES		
DRAWING NO.	01 - 22	PART NO.	28
PART NAME	TOP CAP	MATERIAL	BRASS
SCALE	1 : 2	DRAWN BY	<i>Therese J. ...</i>



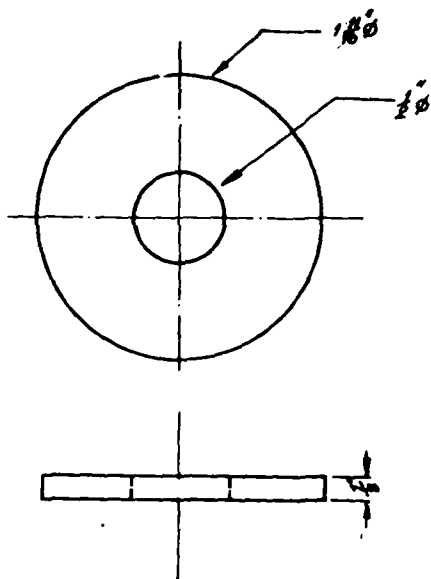
TYPE	DEPARTMENT OF MINERAL RESOURCES		
DRAWING NO.	01 - 23	PART NO.	29
PART NAME	BOTTOM CAP & INLET VALVE SEAT		
SCALE	1 : 2	MATERIAL	BRASS



TYPE	DEPARTMENT OF MINERAL RESOURCES		
DRAWING NO.	01 - 24	PART NO.	30
PART NAME	INLET VALVE HOUSING		
SCALE	1 : 1	MATERIAL	BARSS

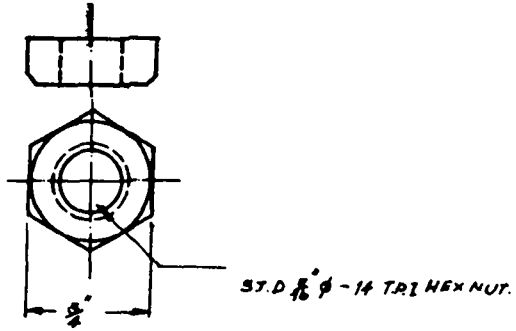


TYPE	DEPARTMENT OF MINERAL RESOURCES		
DRAWING NO.	01 - 25	PART NO.	31
PART NAME	INLET VALVE	MATERIAL	BRASS
SCALE	1 : 2	DRAWN BY	<i>Frank M. ...</i>

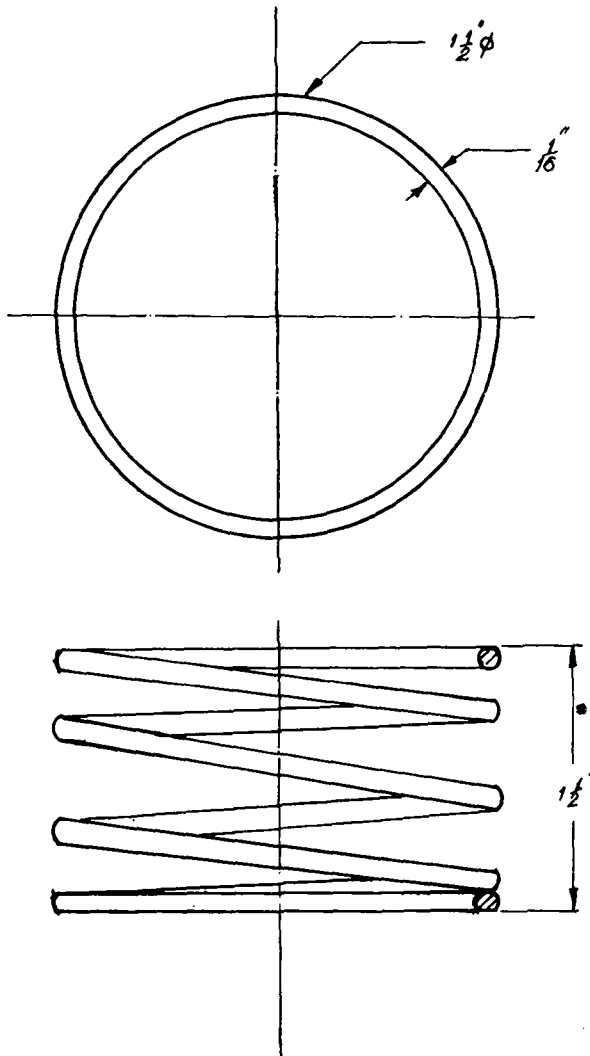


TYPE	DEPARTMENT OF MINERAL RESOURCES		
DRAWING NO.	01 - 26	PART NO.	32
PART NAME	INLET VALVE LINING		
SCALE	1 : 1	MATERIAL	LEATHER

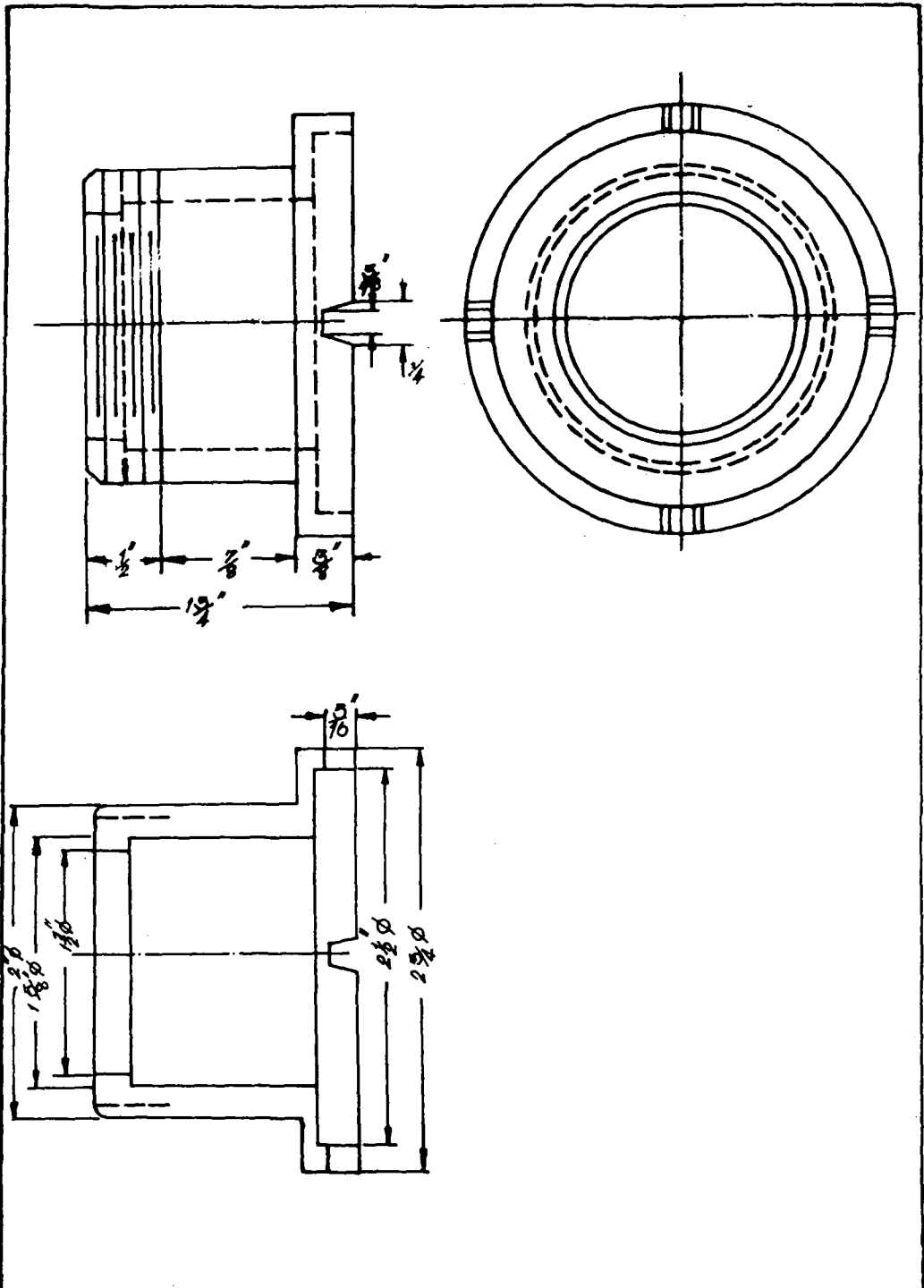




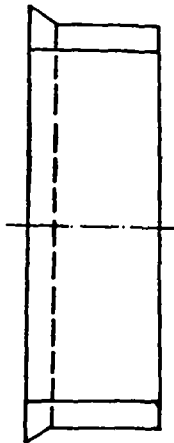
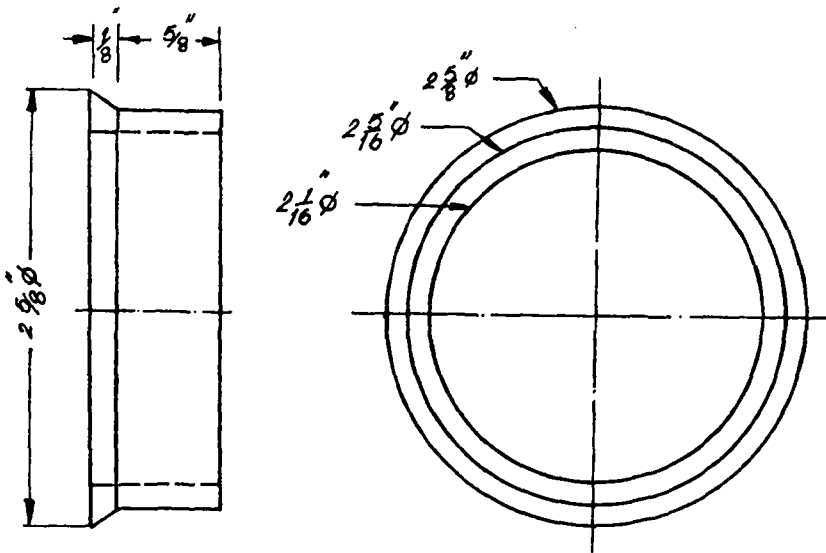
TYPE	DEPARTMENT OF MINERAL RESOURCES		
DRAWING NO.	01 - 27	PART NO.	34
PART NAME	HEX. NUT	MATERIAL	BRASS
SCALE	1 : 1	DRAWN BY	<i>Thomas P. ...</i>



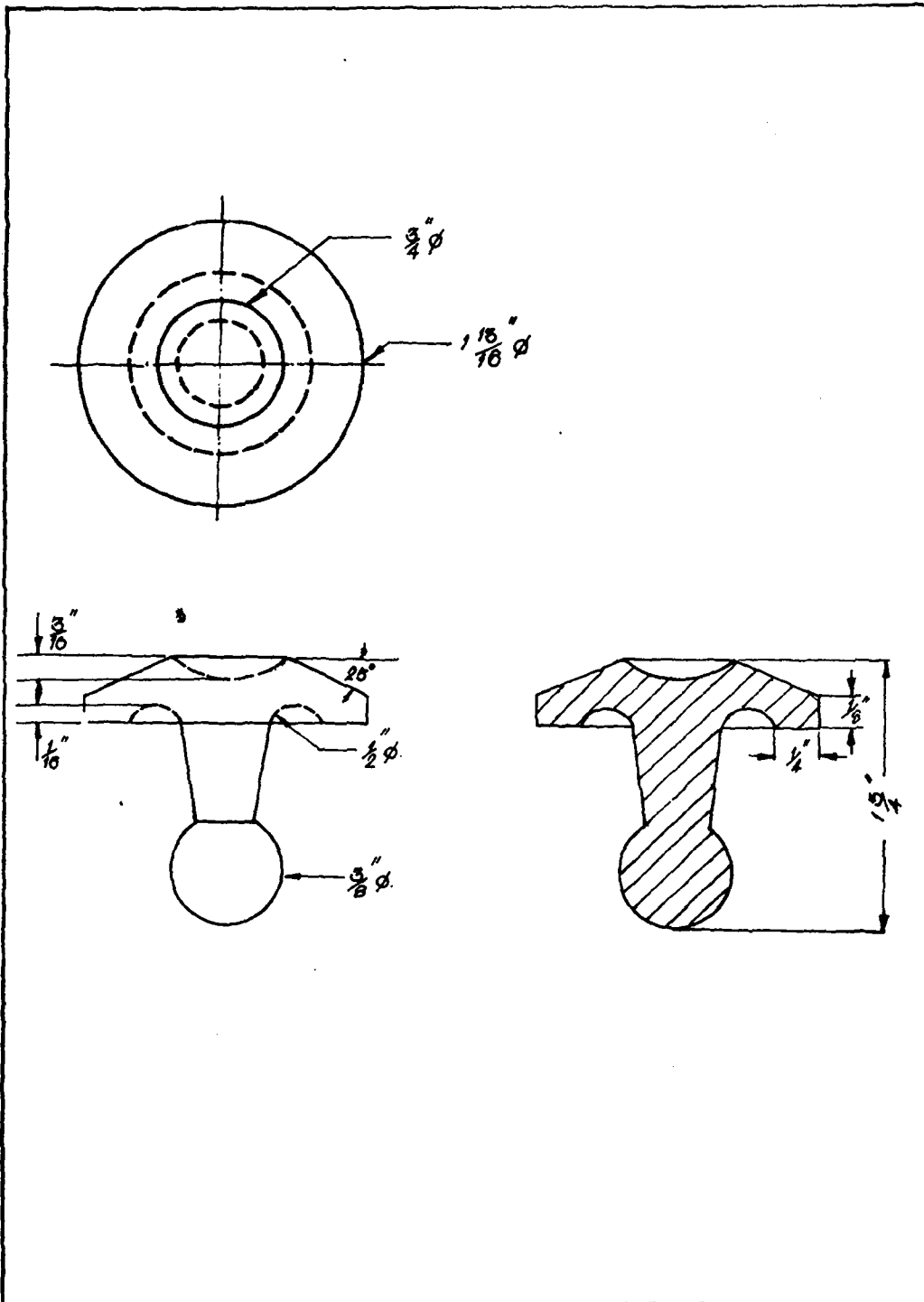
TYPE	DEPARTMENT OF MINERAL RESOURCES		
DRAWING NO.	01 - 28	PART NO.	35
PART NAME	HELICAL WIRE SPRING		
SCALE	1 : 1	MATERIAL	BRASS



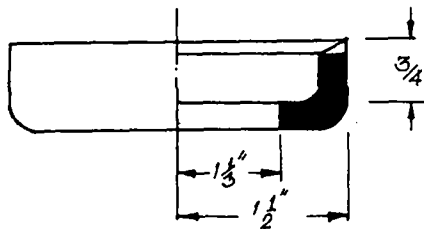
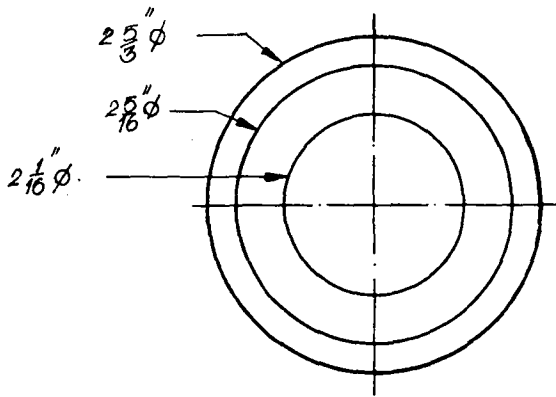
TYPE	DEPARTMENT OF MINERAL RESOURCES		
DRAWING NO.	01 - 29	PART NO.	36
PART NAME	PLUNGER FOLLOWER		
SCALE	1 : 1	MATERIAL	BRASS



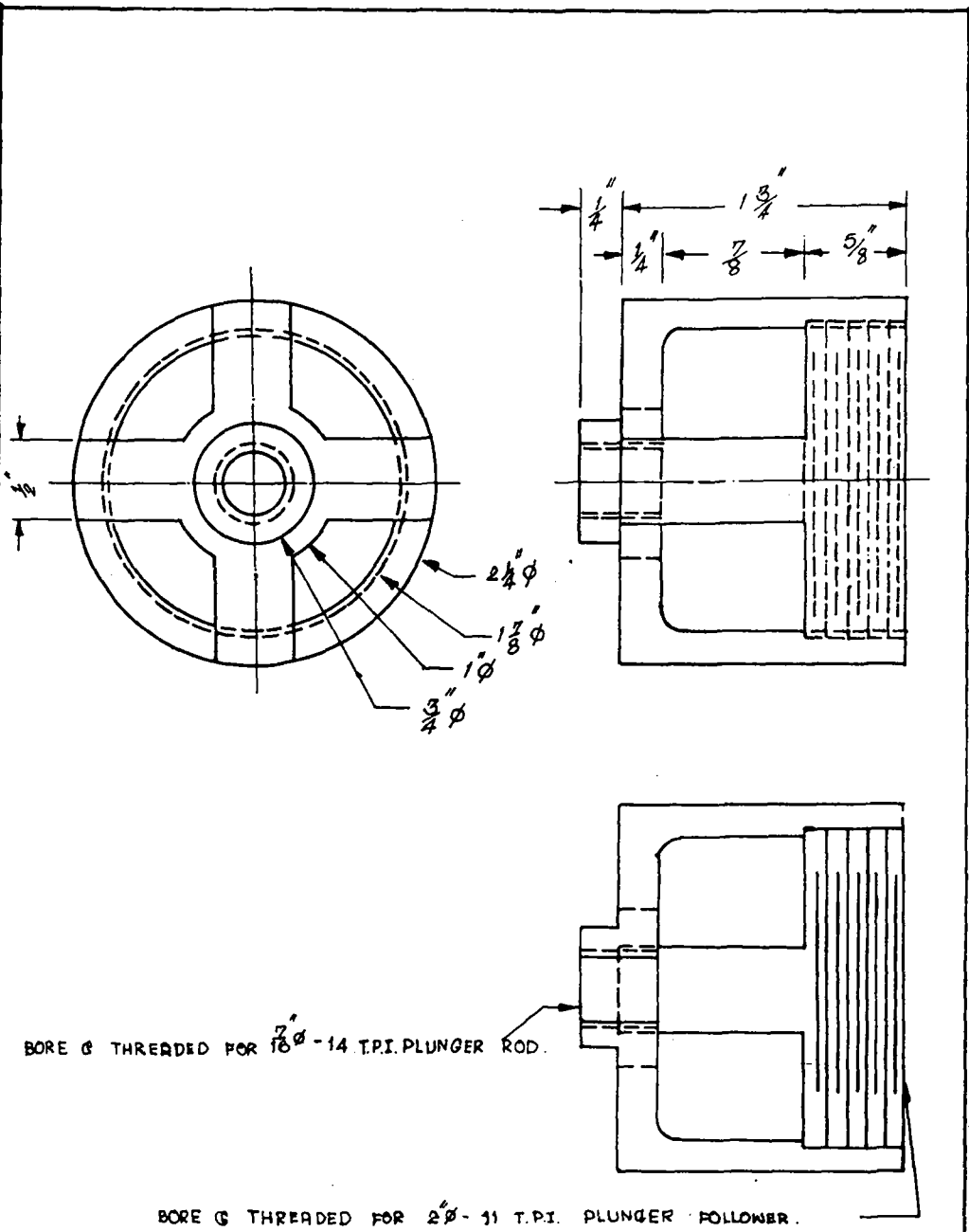
TYPE	DEPARTMENT OF MINERAL RESOURCES		
DRAWING NO.	01 - 30	PART NO.	37
PART NAME	PLUNGER CUP SPACER		
SCALE	1 : 1	MATERIAL	BRASS



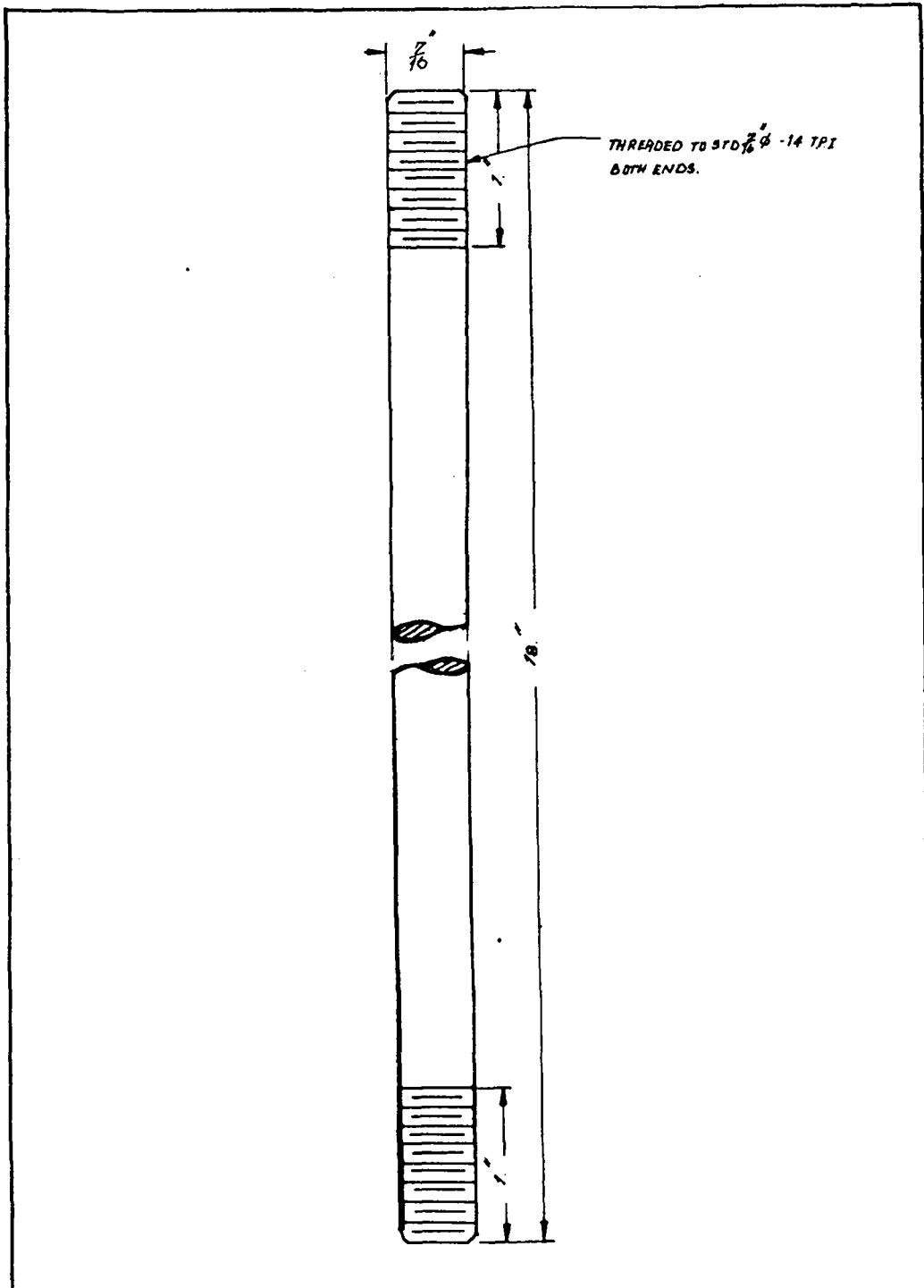
TYPE	DEPARTMENT OF MINERAL RESOURCES		
DRAWING NO.	01 - 31	PART NO.	38
PART NAME	PLUNGER VALVE MATERIAL	BRASS	
SCALE	1 : 1	DRAWN BY	<i>Frank J. ...</i>



TYPE	DEPARTMENT OF MINERAL RESOURCES		
DRAWING NO.	01 - 32	PART NO.	39
PART NAME	PLUNGER CUP	MATERIAL	LEATHER
SCALE	1 : 1	DRAWN BY	<i>Francis N. ...</i>

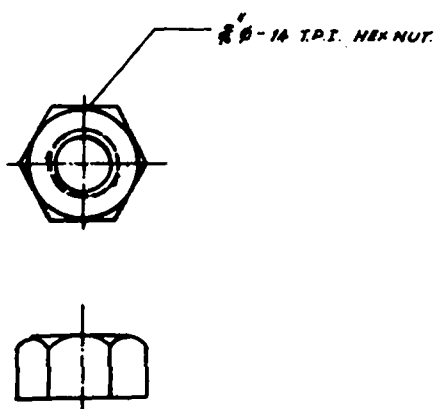


TYPE	DEPARTMENT OF MINERAL RESOURCES		
DRAWING NO	01 - 33	PART NO	40
PART NAME	PLUNGER CAGE	MATERIAL	BRASS
SCALE	1 : 1	DRAWN BY	<i>Veronica N. ...</i>

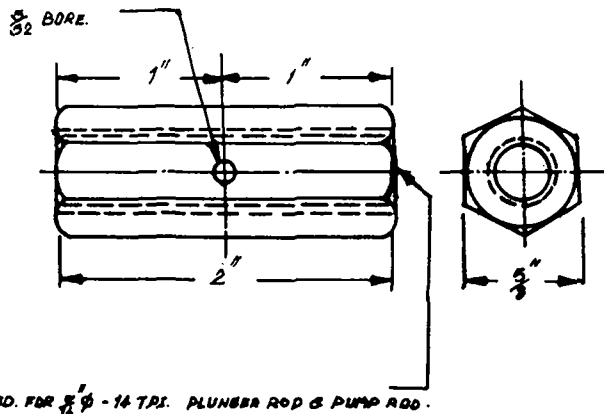


TYPE	DRPARTMENT OF MINERAL RESOURCES		
DRAWING NO.	01 - 34	PART NO.	41
PART NAME	PLUNGER ROD	MATERIAL	LOLD DRAWN STEEL
SCALE	1 : 1	DRAWN BY	<i>Frank Stewart</i>





TYPE	DEPARTMENT OF MINERAL RESOURCES		
DRAWING NO.	01 - 35	PART NO.	42
PART NAME	HEX. NUT	MATERIAL	BRASS
SCALE	1 : 1	DRAWN BY	<i>Franklin J. ...</i>



TYPE	DEPARTMENT OF MINERAL RESOURCES		
DRAWING NO.	01 - 36	PART NO.	44
PART NAME	HEX. COUPLING	MATERIAL	STEEL
SCALE	1 : 1	DRAWN BY	<i>Thomas J. Smith</i>

**PART II**

TYPE OF HAND PUMP

DEPARTMENT OF PUBLIC WORK

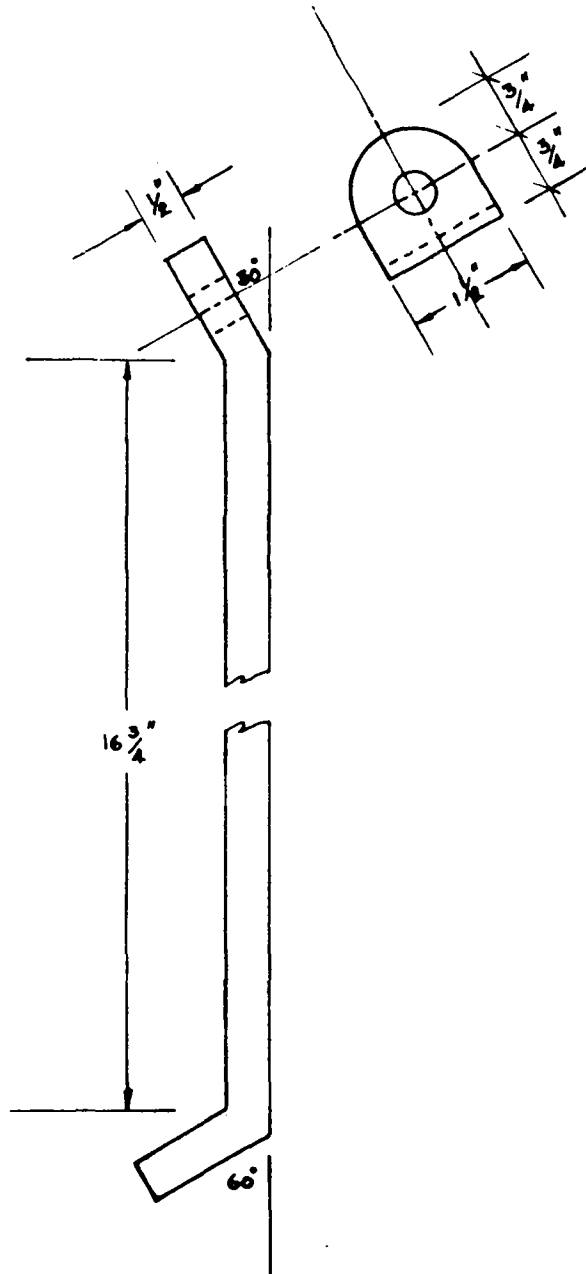
PART NO.	PART NAME	QUAN.	MATERIAL	DRAWING NO.
1	Pump body	1	Cast iron	02 - 01
2	Brace	1	Steel	02 - 02
3	Bushing reducer	1	Gulv. steel	02 - 01
4	Sq. hd. plug	1	Gulv. steel	02 - 01
5	Base plate	1	Sheet steel	02 - 03
6	Spout	1	Cast iron	02 - 04
7	Cap screw	3	Standard	02 - 01
8	Sq. hd. plug	1	Standard	02 - 01
9	Bolt & nut	9	Standard	02 - 01
10	Spout gasket	1	Rubber	02 - 05
11	Pump top gasket	1	Leather	02 - 06
12	Pump top	1	Cast iron	02 - 07
13	Stuffing box	1	Cast iron	02 - 08
14	Stuffing nut	1	Brass	02 - 09
15	Piston rod	1	Steel	02 - 10
16	Fulcrum link	1	Cast iron	02 - 11
17	Flat bar	1	Steel	02 - 12
18	Bottom fulcrum pin	1	Steel	02 - 13
19	Top fulcrum pin	1	Steel	02 - 14
20	Eye pump pin	1	Steel	02 - 15
21	Cotter pin	6	Standard	-
22	Gasket	1 ft		-
23	Cylinder	1	PVC	02 - 16
24	Top cap	1	Brass	02 - 17
25	Bottom cap	1	Brass	02 - 18
26	Inlet valve housing	1	Brass	02 - 19
27	Inlet valve	1	Brass	02 - 20
28	Inlet valve lining	1	Leather	02 - 21
29	Washer	1	Brass	-
30	Hex. nut	1	Brass	-
31	Wire spring	1	Brass	-
32	Plunger follower	1	Brass	02 - 22
33	Plunger cup spacer		Brass	02 - 23

TYPE OF HAND PUMP

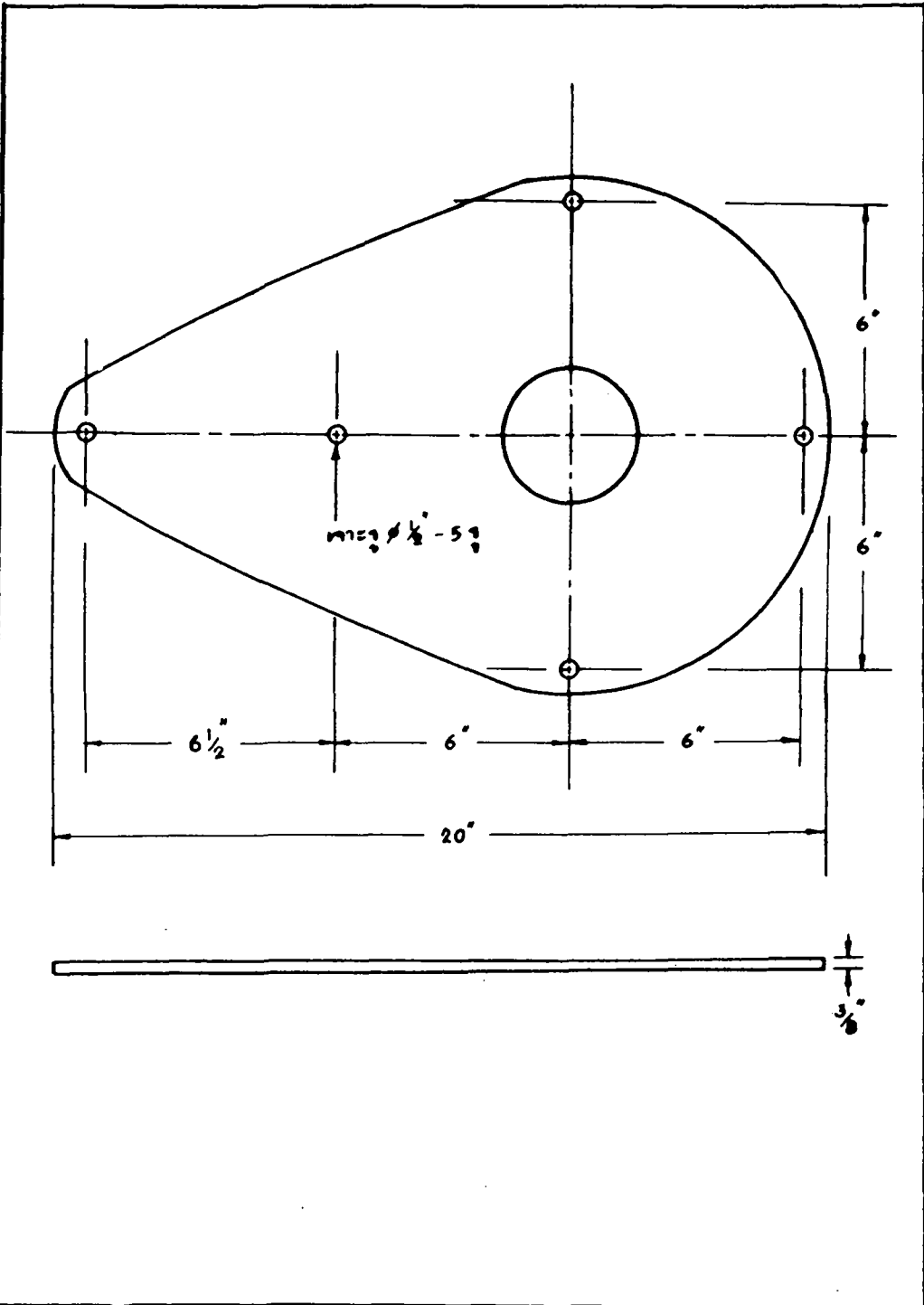
DEPARTMENT OF PUBLIC WORKS

PART NO.	PART NAME	QUAN.	MATERIAL	DRAWING NO.
34	Plunger valve	1	Brass	02-24
35	Plunger cap	1	Leather	02-25
36	Plunger cage	1	Brass	02-26
37	Plunger rod		Steel	02-27
38	Hex. nut	1	Brass	-
39	Cylinder gasket	1	Leather	02-28
40	Hex. coupling		Steel	02-29
41	Pump handle	1	Cast iron	02-30
42	Pipe		Steel	02-31
43	Coupling		Steel	02-32



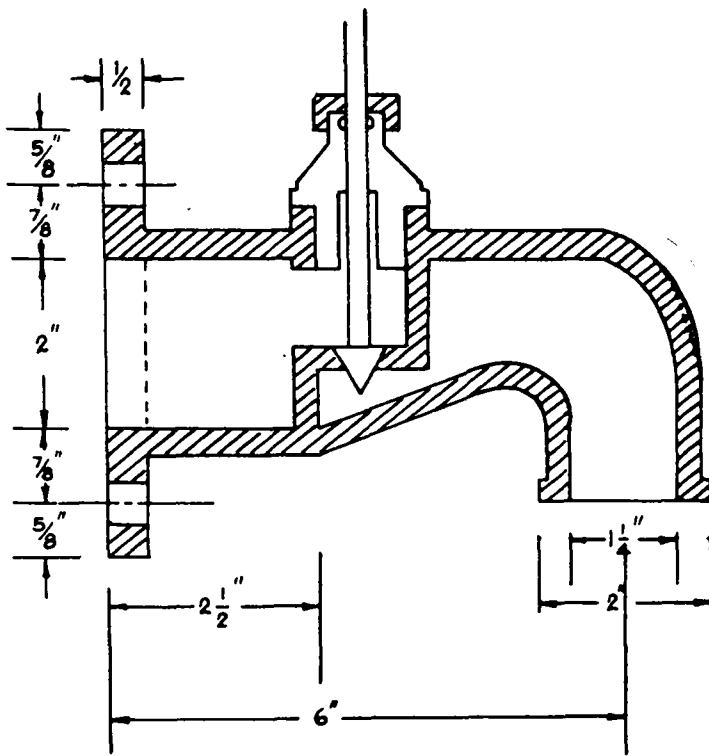


TYPE	DEPARTMENT OF PUBLIC WORKS		
DRAWING NO.	02 - 02	PART NO.	2
PART NAME	BRACE	MATERIAL	STEEL
SCALE	1 : 2	DRAWN BY	<i>Tamara Numba</i>

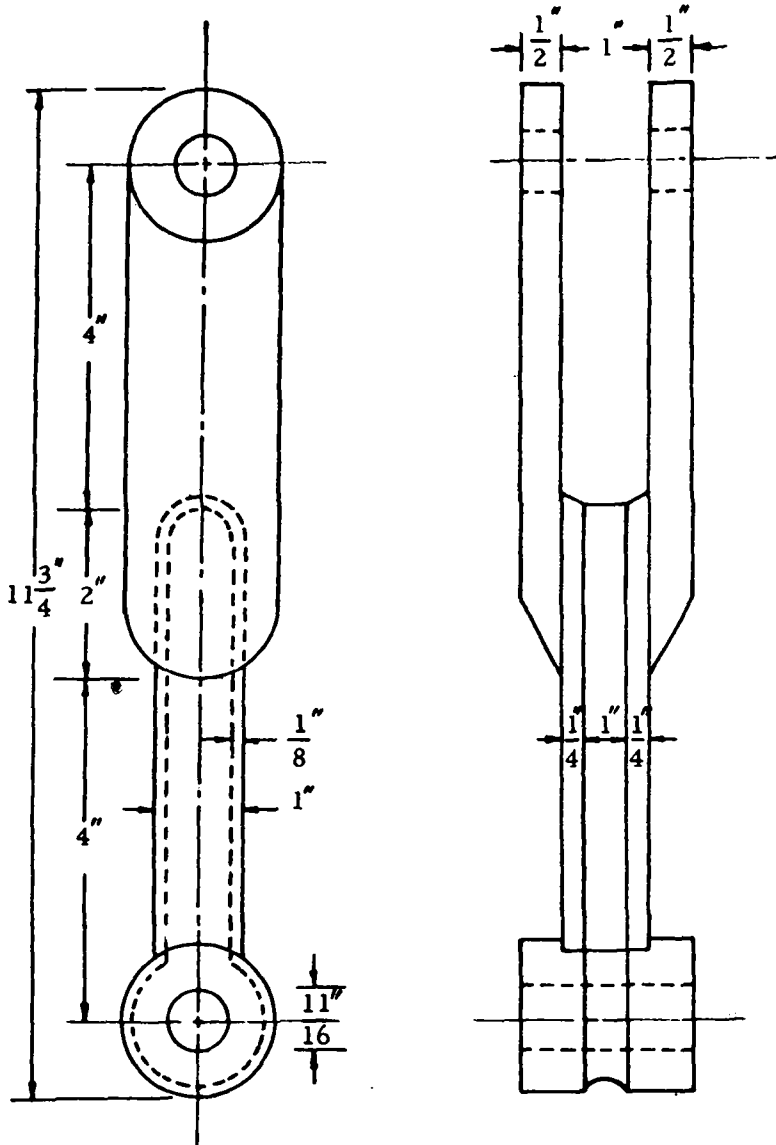


TYPE	DEPARTMENT OF PUBLIC WORKS		
DRAWING NO.	02 - 03	PART NO.	5
PART NAME	BASE PLATE	MATERIAL	STEEL SHEET
SCALE	1 : 4	DRAWN BY	<i>Vasile Novakof</i>

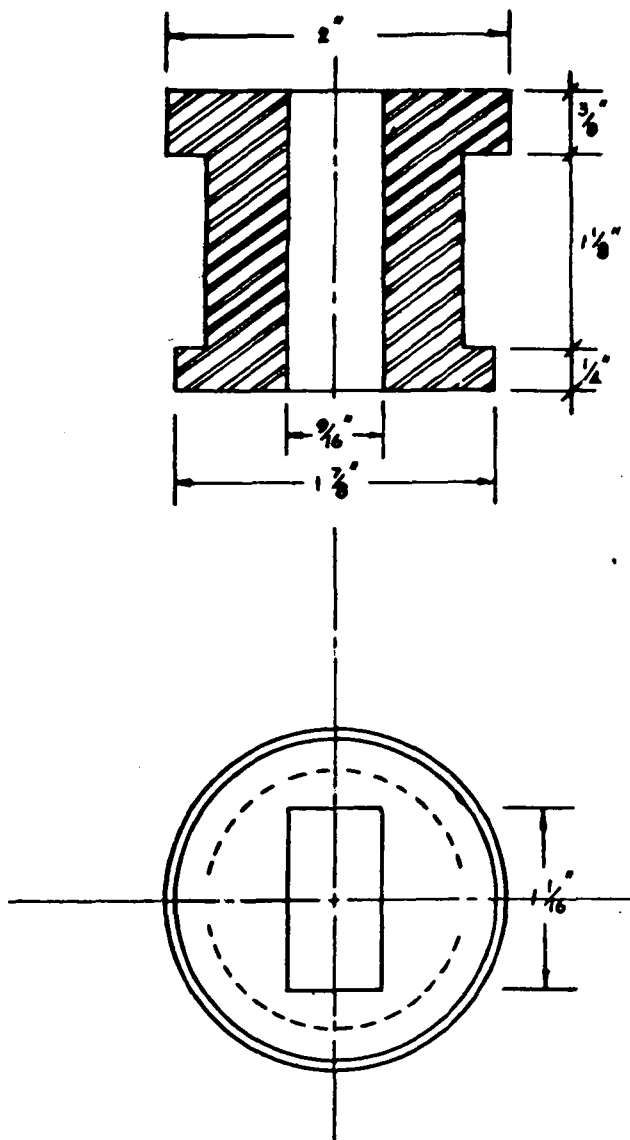




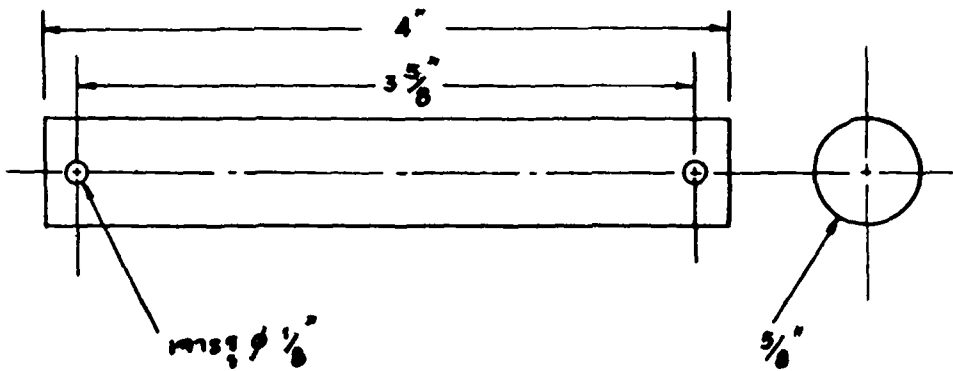
TYPE	DEPARTMENT OF PUBLIC WORKS		
DRAWING NO.	02 - 04	PART NO.	6
PART NAME	SPOUT	MATERIAL	CAST IRON
SCALE	1 : 1	DRAWN BY	<i>Wm. L. ...</i>



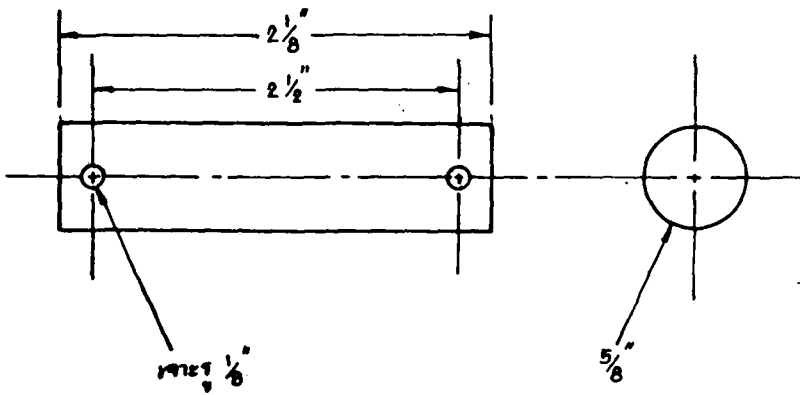
TYPE	DEPARTMENT OF PUBLIC WORKS		
DRAWING NO.	02 - 11	PART NO.	16
PART NAME	FULCRUM LINK	MATERIAL	CAST IRON
SCALE	1:2	DRAWN BY	<i>Traske Howard</i>



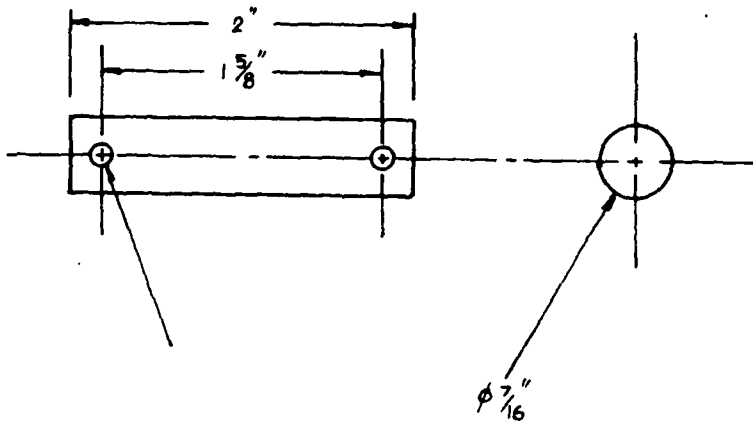
TYPE	DEPARTMENT OF PUBLIC WORKS		
DRAWING NO.	02 - 12	PART NO.	17
PART NAME	FLAT BAR	MATERIAL	STEEL
SCALE	1 : 1	DRAWN BY	<i>Thomas L. Howard Jr.</i>



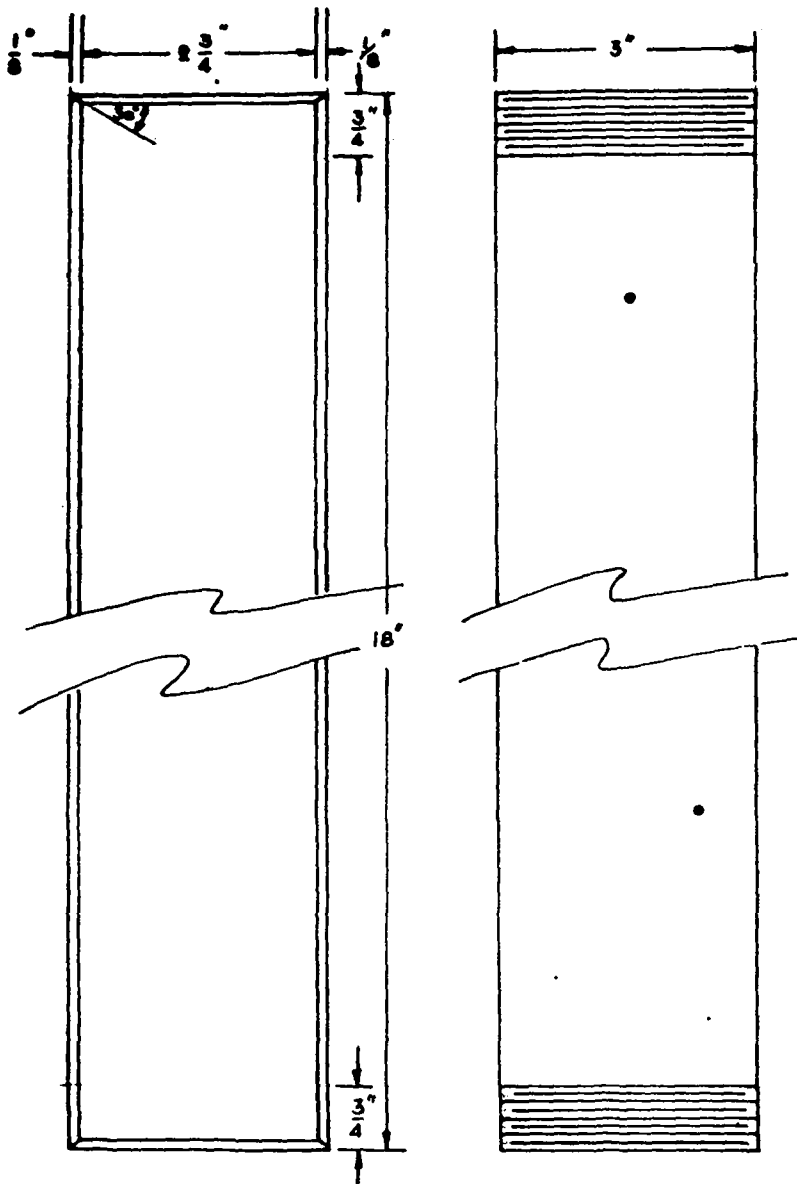
TYPE	DEPARTMENT OF PUBLIC WORKS		
DRAWING NO.	02 - 13	PART NO.	18
PART NAME	BOTTOM FULCRUM PIN		
SCALE	1 : 1	MATERIAL	STEEL



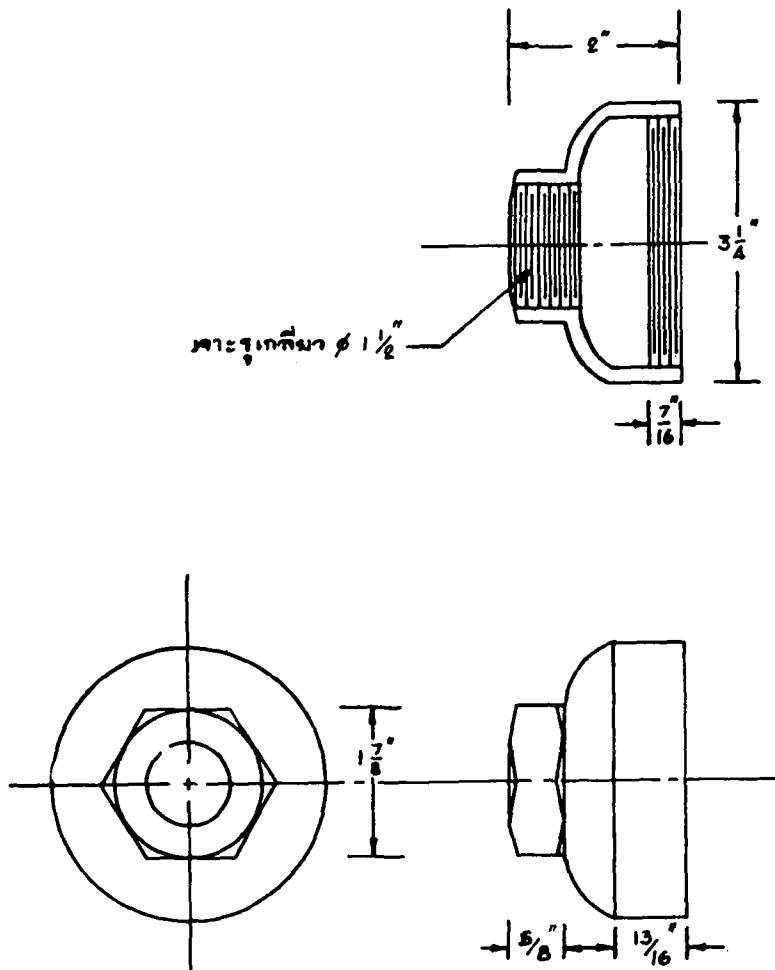
TYPE	DEPARTMENT OF PUBLIC WORKS		
DRAWING NO.	02 - 14	PART NO.	19
PART NAME	TOP FULCRUM	PIN	
SCALE	1 : 1	MATERIAL	STEEL



TYPE	DEPARTMENT OF PUBLIC WORKS		
DRAWING NO.	02 - 15	PART NO.	20
PART NAME	EYE PUMP PIN	MATERIAL	STEEL
SCALE	1 : 1	DRAWN BY	<i>Frank N. Smith</i>

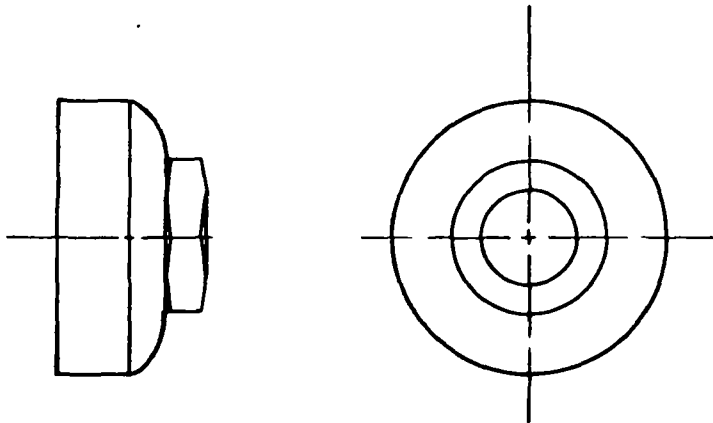
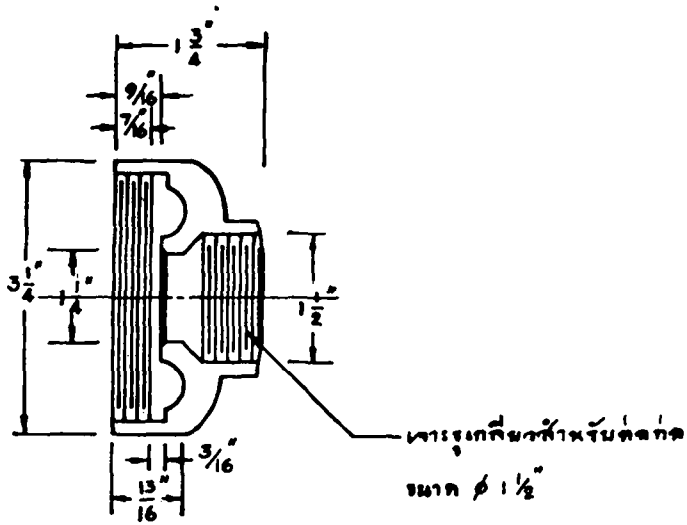


TYPE	DEPARTMENT OF PUBLIC WORKS		
DRAWING NO.	02 - 16	PART NO.	23
PART NAME	CYLINDER	MATERIAL	PVC.
SCALE	1 : 2	DRAWN BY	<i>Frank Novotny</i>

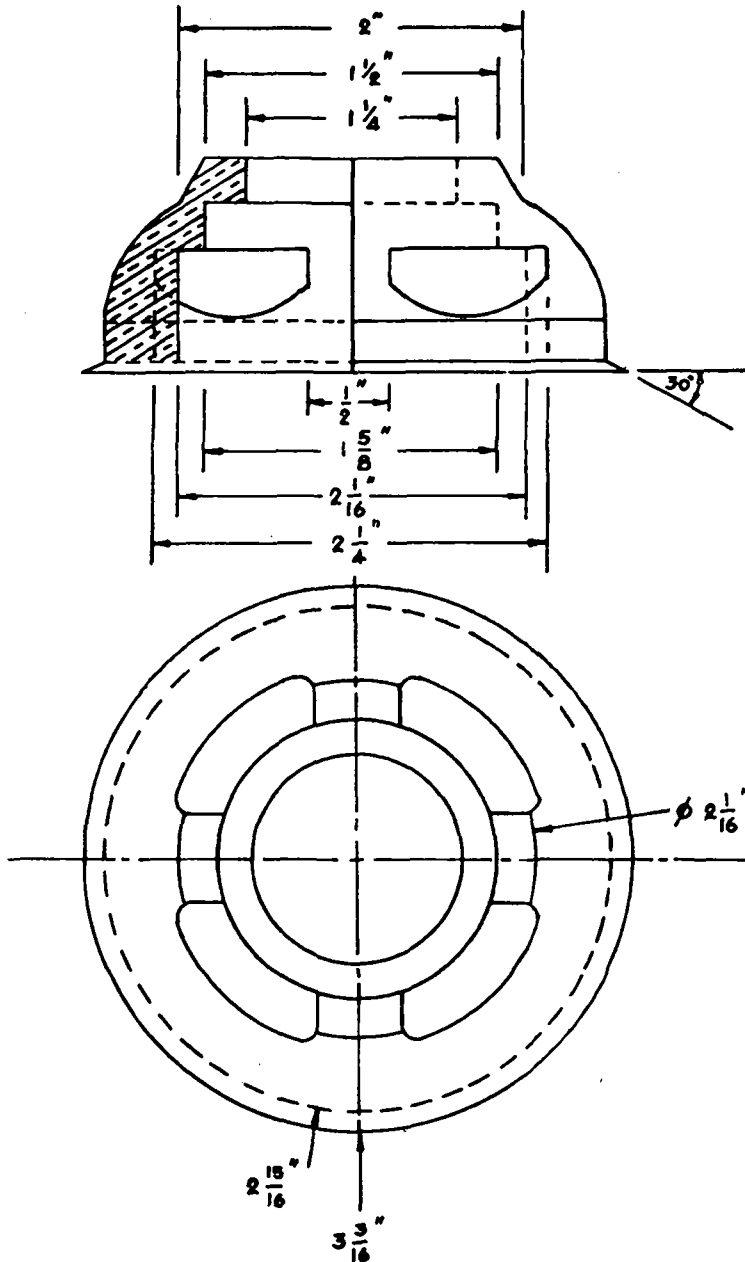


TYPE	DEPARTMENT OF PUBLIC WORKS		
DRAWING NO.	02 - 17	PART NO.	24
PART NAME	TOP CAP	MATERIAL	BRASS
SCALE	1 : 2	DRAWN BY	<i>Tanaka Juntoku</i>

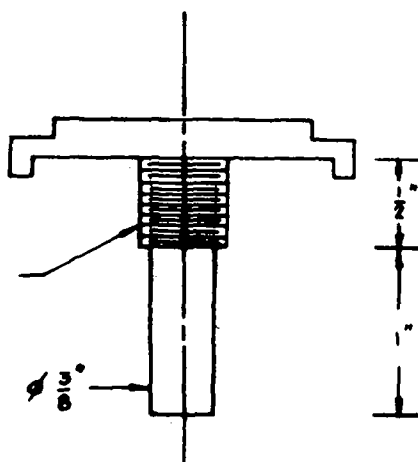
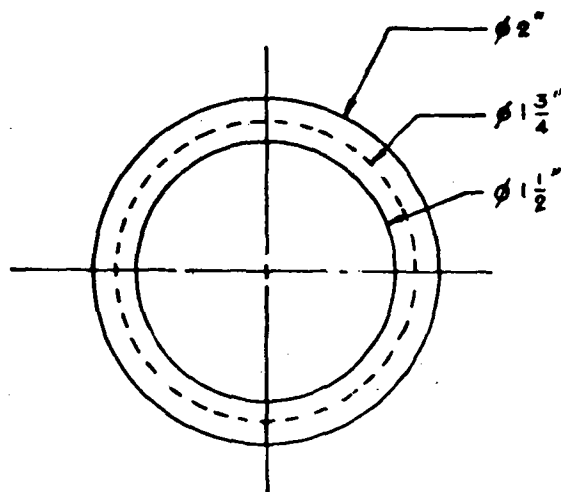




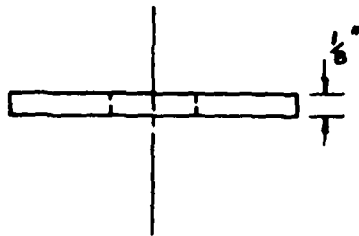
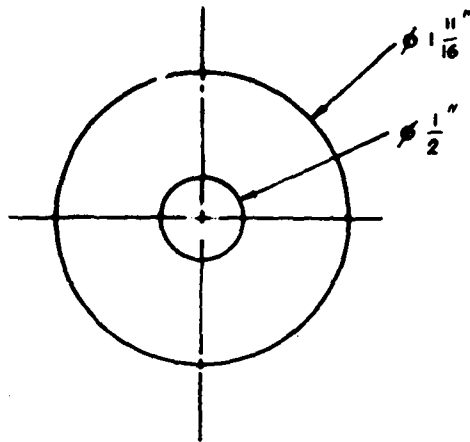
TYPE	DEPARTMENT OF PUBLIC WORKS		
DRAWING NO	02 - 18	PART NO.	25
PART NAME	BOTTOM CAP	MATERIAL	BRASS
SCALE	1 : 2	DRAWN BY	<i>Vanee J. Jirapong</i>



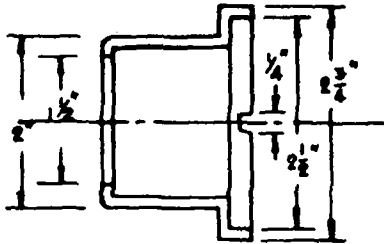
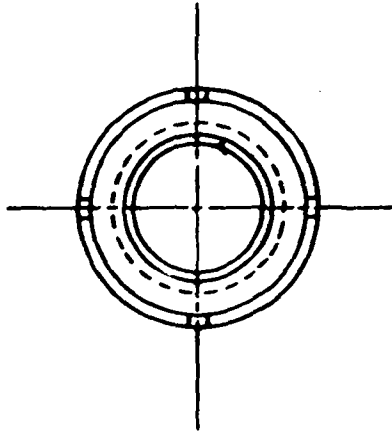
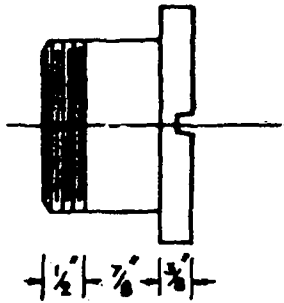
TYPE	DEPARTMENT OF PUBLIC WORKS		
DRAWING NO.	02 - 19	PART NO.	26
PART NAME	INLET VALVE HOUSING		
SCALE	1 : 1	MATERIAL	BRASS



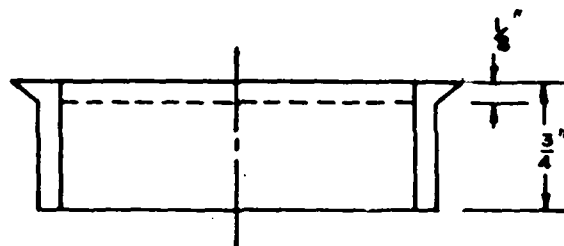
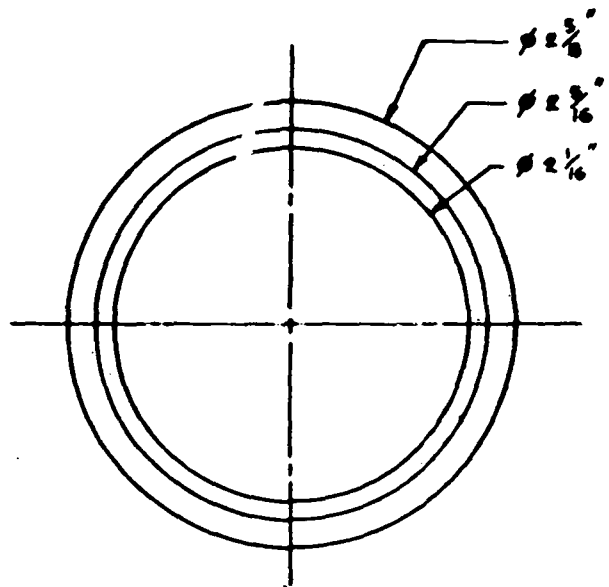
TYPE	DEPARTMENT OF PUBLIC WORKS		
DRAWING NO.	02 - 80	PART NO.	27
PART NAME	INLET VALVE	MATERIAL	BRASS
SCALE	1 : 1		



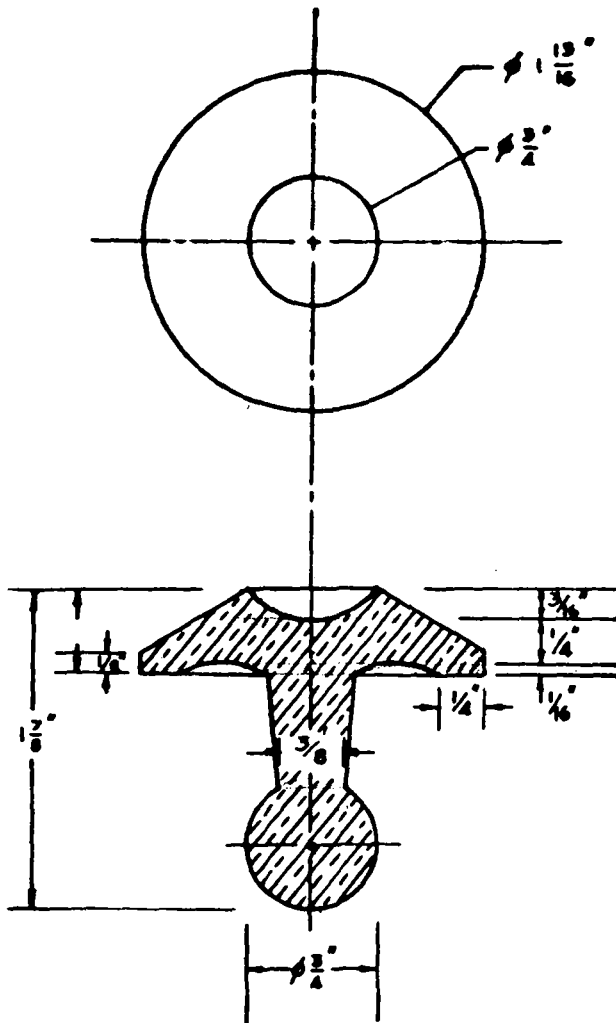
TYPE	DEPARTMENT OF PUBLIC WORKS		
DRAWING NO.	02 - 21	PART NO.	28
PART NAME	INLET VALVE LINING		
SCALE	1 : 1	MATERIAL	LEATHER



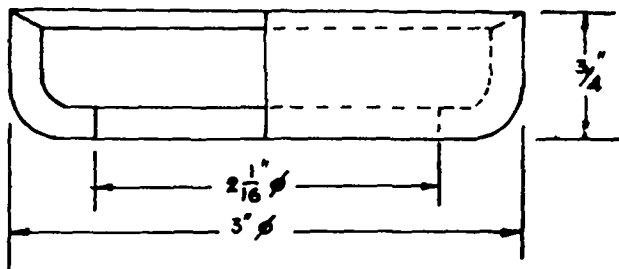
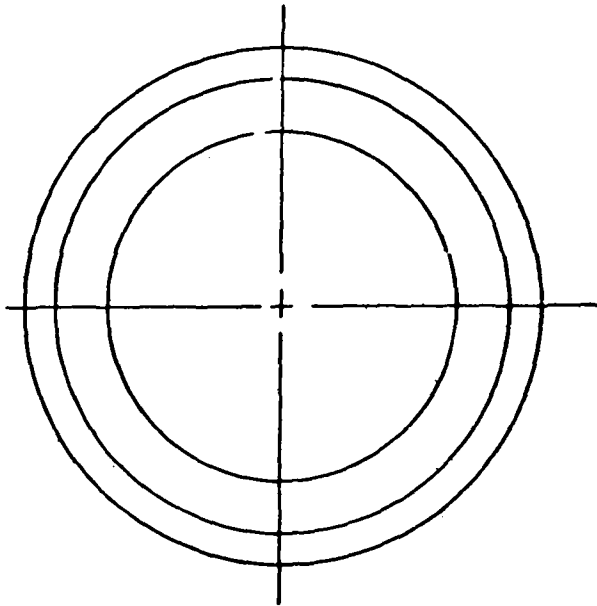
TYPE	DEPARTMENT OF PUBLIC WORKS		
DRAWING NO.	02 - 22	PART NO.	32
PART NAME	PLUNGER FOLLOWER		
SCALE	1 : 2	MATERIAL	BRASS



TYPE	DEPARTMENT OF PUBLIC WORKS		
DRAWING NO.	02 - 23	PART NO.	33
PART NAME	PLUNGER CUP SPACER		
SCALE	1 ; 1	MATERIAL	BRASS

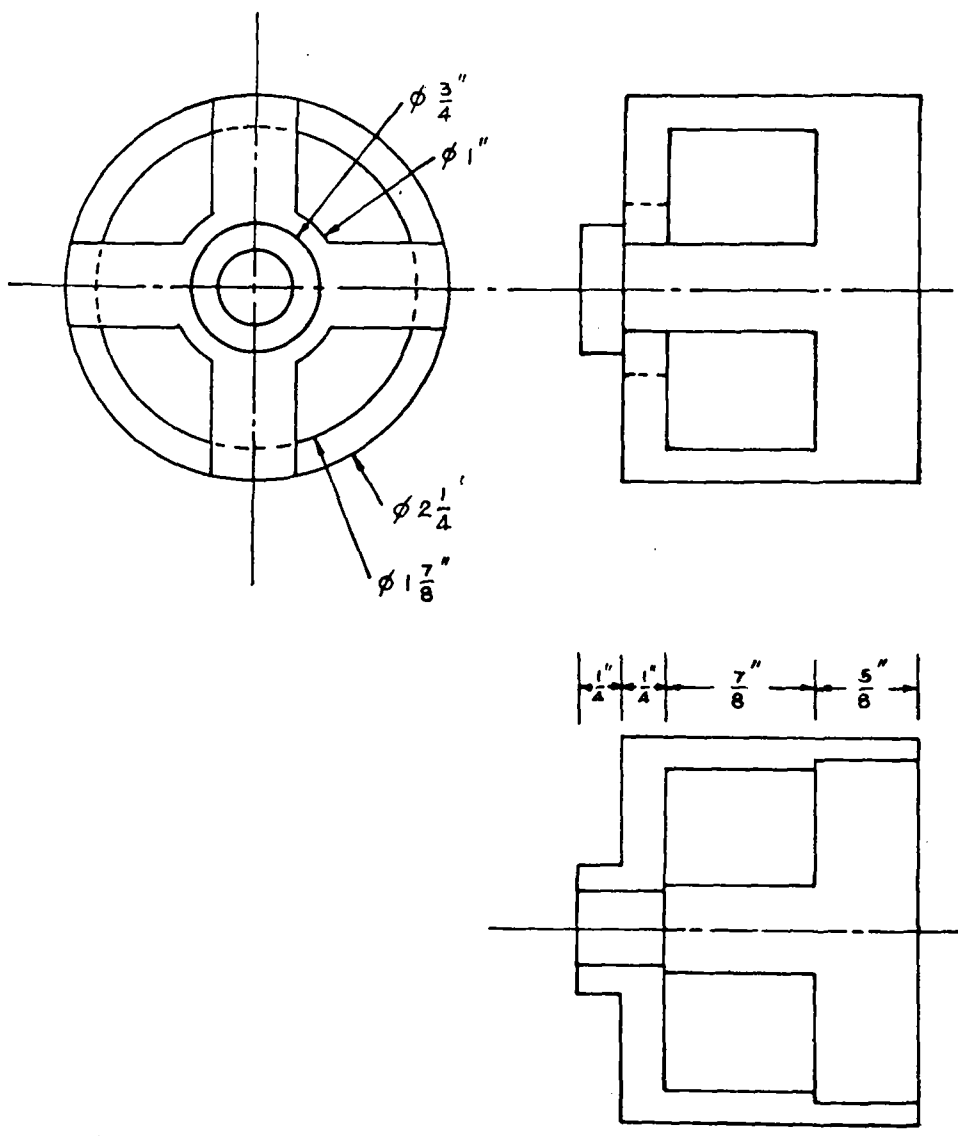


TYPE	DEPARTMENT OF PUBLIC WORKS		
DRAWING NO.	02 - 24	PART NO.	34
PART NAME	PLUNGER VALVE	MATERIAL	BRASS
SCALE	1 : 1	DRAWN BY	<i>Tosok Noyah</i>

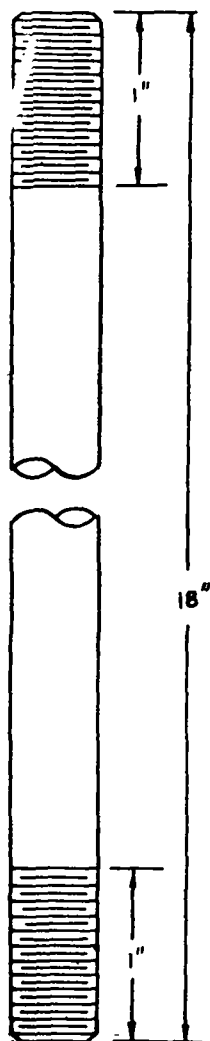


TYPE	DEPARTMENT OF PUBLIC WORKS		
DRAWING NO.	02 - 25	PART NO.	35
PART NAME	PLUNGER CUP	MATERIAL	LEATHER
SCALE	1 : 1	DRAWN BY	<i>Vaankha Dhandya</i>

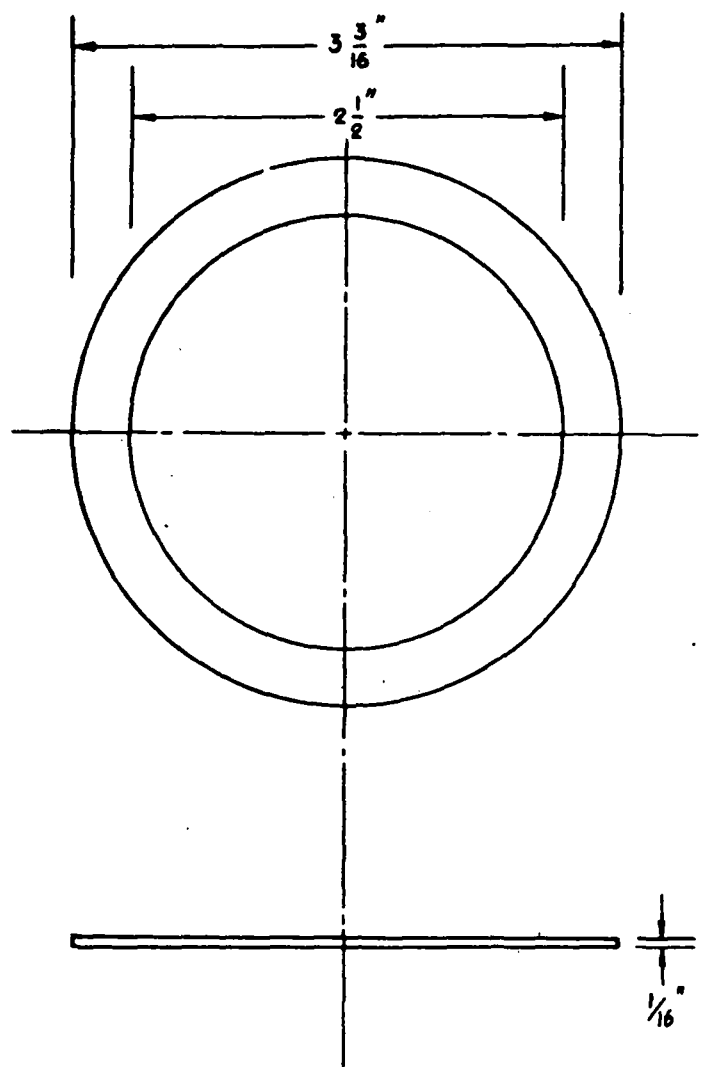




TYPE	DEPARTMENT OF PUBLIC WORKS		
DRAWING NO.	02 - 26	PART NO.	36
PART NAME	PLUNGER CAGE	MATERIAL	BRASS
SCALE	1 : 1	DRAWN BY	<i>Frank Park of</i>

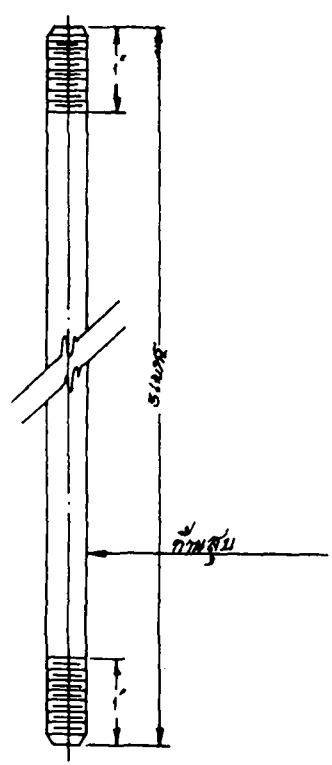
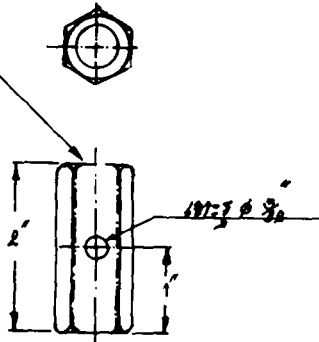


TYPE	DEPARTMENT OF PUBLIC WORKS		
DRAWING NO.	02 - 27	PART NO.	37
PART NAME	PLUNGER ROD	MATERIAL	STEEL
SCALE	1 : 1	DRAWN BY	<i>Frank J. [Signature]</i>

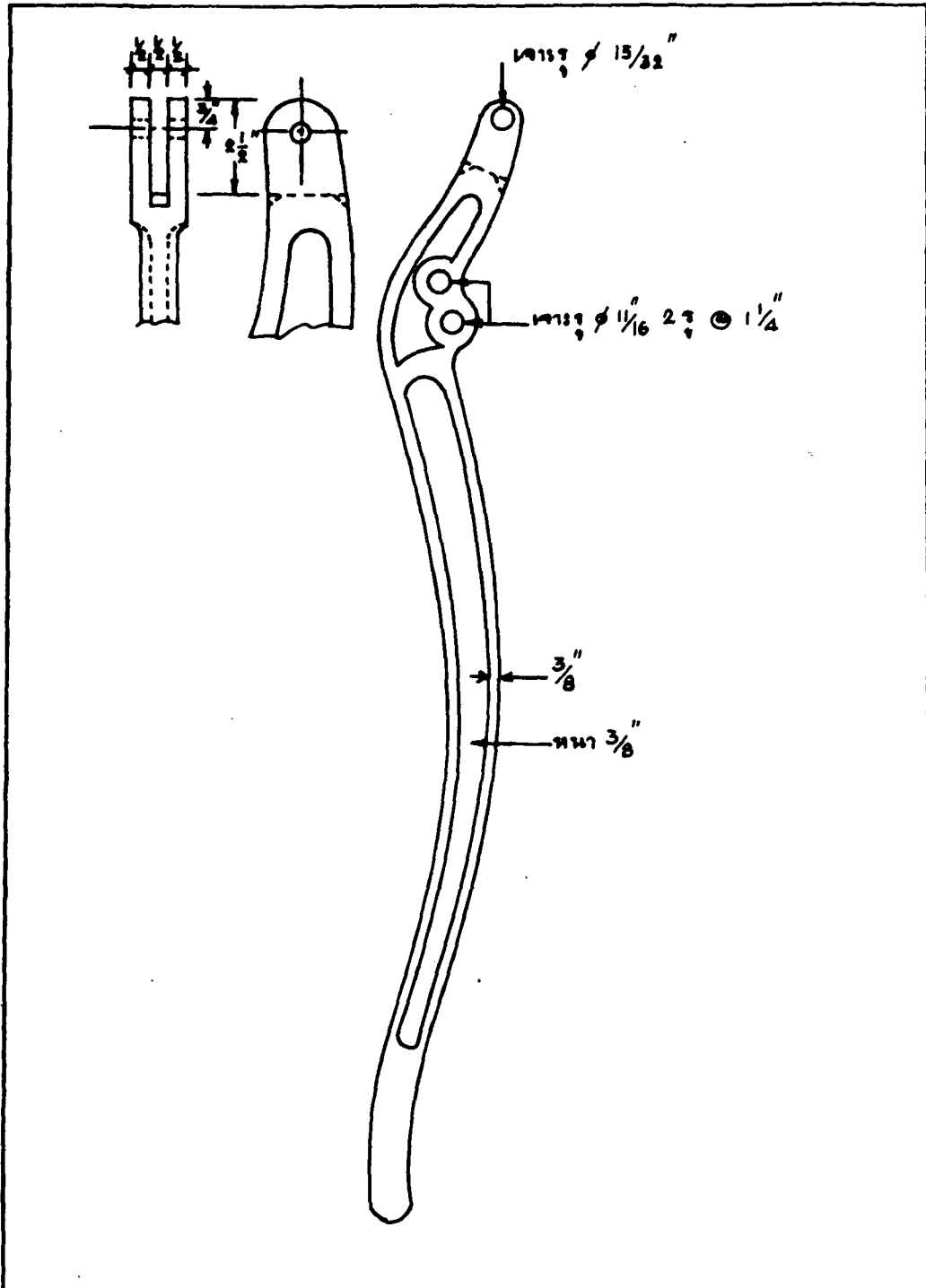


TYPE	DEPARTMENT OF PUBLIC WORKS		
DRAWING NO.	02 - 28	PART NO.	39
PART NAME	CYLINDER GASKET		
SCALE	1 : 1	MATERIAL	LEATHER

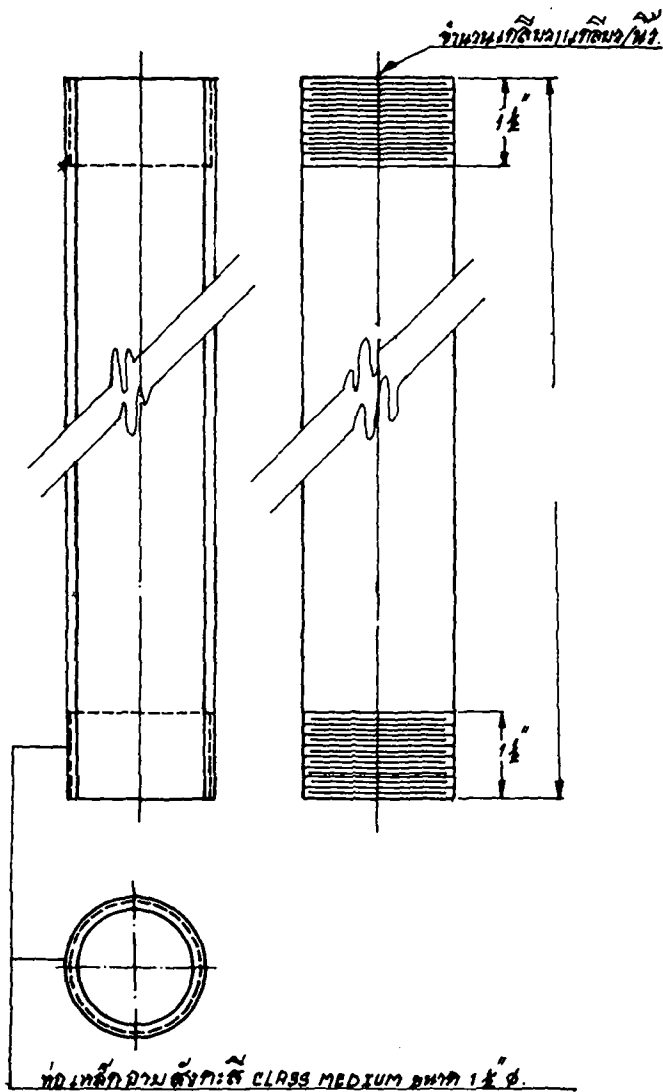
အကျယ်အဝန်း  $\phi 3/8$  - 14 ဟစ်စ်/အင်ချ်



TYPE	DEPARTMENT OF PUBLIC WORKS		
DRAWING NO.	02 - 29	PART NO.	40
PART NAME	HEX. COUPLING	MATERIAL	STEEL
SCALE	1 : 2	DRAWN BY	<i>Umar Hossain</i>



TYPE	DEPARTMENT OF PUBLIC WORKS		
DRAWING NO.	02 - 30	PART NO.	41
PART NAME	PUMP HANDLE	MATERIAL	CAST IRON
SCALE	1 : 4	DRAWN BY	<i>V. K. J. [Signature]</i>



TYPE	DEPARTMENT OF PUBLIC WORKS		
DRAWING NO.	02 - 31	PART NO.	42
PART NAME	PIPE	MATERIAL	STEEL
SCALE	1 : 2	DRAWN BY	<i>Frank P. Smith</i>