



SECTION IX

PROCUREMENT AND MANUFACTURING DETAILS

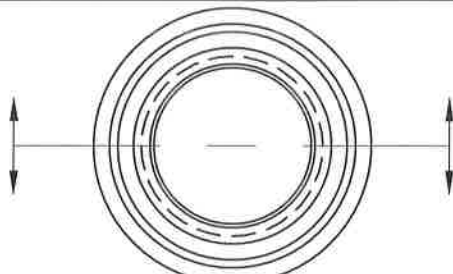
SECTION IX - PROCUREMENT AND MANUFACTURING DETAILS**TABLE OF CONTENTS**

<u>TITLE</u>	<u>NUMBER</u>
Adjustable Valve Box Round Head Sliding Type	P&M /1.0
Adjustable Valve Box Bottom Section with Cutout	P&M /1.1
Adjustable Valve Box Cover Marker Sewer	P&M /1.2
Valve Extension Stem for Valve Boxes	P&M /1.4
Curb Box Bolt	P&M /2.0
Curb Box Cover	P&M /2.2
Curb Box Extension	P&M /2.3
Curb Box Top Section	P&M /2.4
Curb Box Foot Piece	P&M /2.5
Curb Box Rod and Guide Ring	P&M /2.7
Curb Box Riser	P&M /2.8
Manhole Frame Washer	P&M /3.0
Meter Frames for 15", 18" and 21" Meter Housing	P&M /4.0
Single and Double Meter Covers	P&M /4.1
Single and Double Meter Covers	P&M /4.2
Meter Covers Parts	P&M /4.3
Lamp Hole Frame and Cover	P&M /5.0
22-Inch Non-Watertight Manhole Adjusting Ring	P&M /6.0
22-Inch Non-Watertight Manhole Adjusting Ring, 1 ½" and 2" Height	P&M /6.1
22-Inch Non-Watertight Manhole Adjusting Ring, 3" Height	P&M /6.2

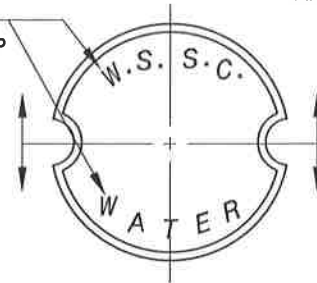


Curb Box Repair Lid for Paved Areas (Assembly)	P&M /7.0
Curb Box Repair Lid for Paved Areas (Details)	P&M /7.1
Air Release Pipe Vent Box Base Pad	P&M /8.0
Air Release Pipe Vent Box	P&M /8.5
Main Valve for Improved L.D. Wood Matthews Adaptor Type Fire Hydrant	P&M /9.0
Locking Type – Watertight 30” Manhole Frame and Cover	P&M /10.1a
Locking Type – Watertight 30” Manhole Frame and Cover	P&M /10.1b
Locking Type – Watertight 36” Manhole Frame and Cover	P&M /10.2a
Locking Type – Watertight 36” Manhole Frame and Cover	P&M /10.2b
Lightweight Manhole Frame and Cover	P&M /10.4a
Lightweight Manhole Frame and Cover	P&M /10.4a1
Heavyweight Manhole Frame and Cover	P&M /10.4b
Heavyweight Manhole Frame and Cover	P&M /10.4b1
Standard 22” Non-Watertight Manhole Frame and Cover	P&M /10.5a
Standard 22” Non-Watertight Manhole Frame and Cover	P&M /10.5b
Alternate Locking Type - Watertight 22” Manhole Frame and Cover	P&M /10.7a
Alternate Locking Type - Watertight 22” Manhole Frame and Cover	P&M /10.7b
Stand-up Meter Key	P&M /11.1

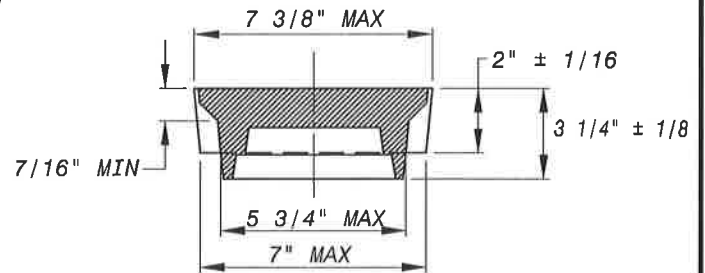
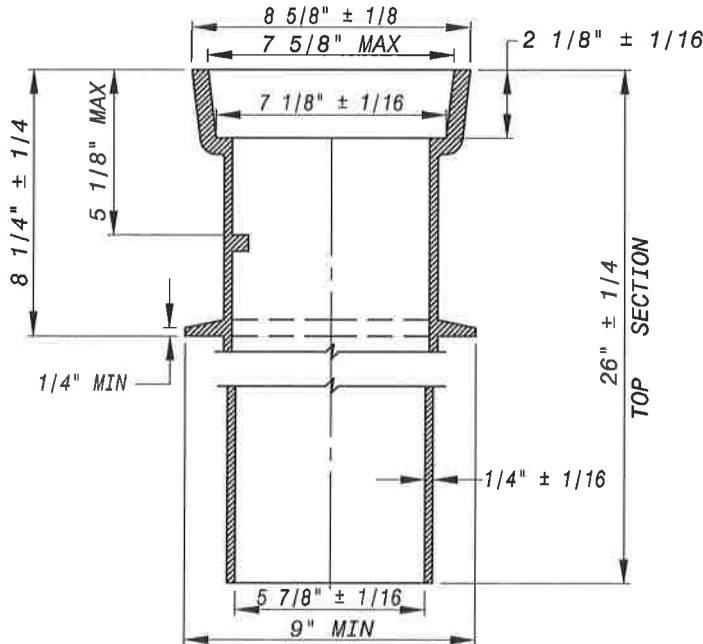




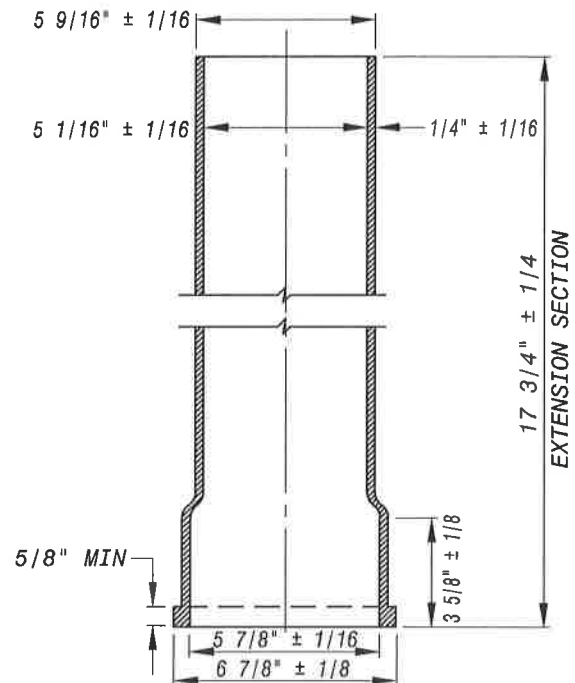
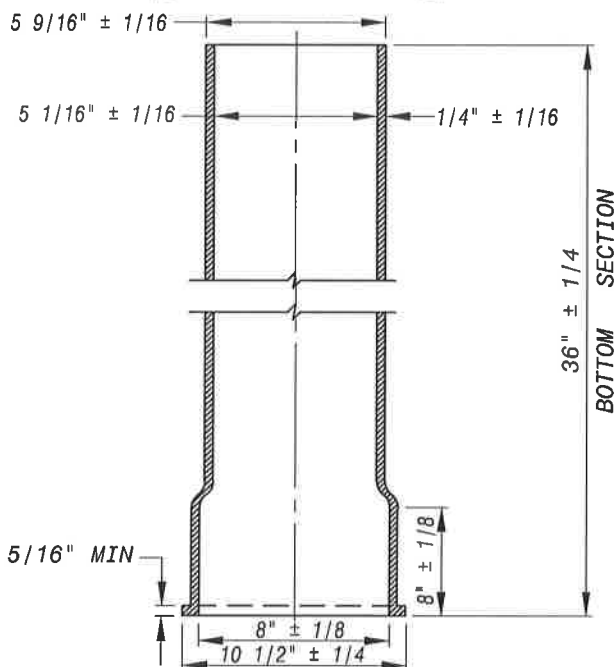
LETTERING TO BE
CAST FLUSH WITH TOP
OF LID. POSITION
AS SHOWN



APPLICABLE STOCK NO.
4881-9002-6
4881-9003-4
4881-9005-9
4881-9001-8



COVER



NOTE:

STOP LUG IN TOP SECTION TO BE 1/2" x 1/2" x 5/8" MIN. LUG TO BE SIZED SO AS NOT TO INTERFERE WITH OPERATION OF VALVE.
ALL CASTINGS ARE TO BE CLEANED BY AN APPROVED PROCESS AND COATED WITH AN APPROVED ASPHALTUM OR COAL TAR PAINT.

WEIGHT

COVER - 12 1/2 LBS MIN.
TOP SEC. - 37 1/2 LBS MIN.
BOTTOM SEC. - 46 LBS MIN.
EXTENSION SEC. - 17 LBS MIN.

ALL SECTIONS SHOWN TO BE
GRAY IRON CASTINGS,
ASTM.A-48 CLASS NO.25 MIN.

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REVISIONS:

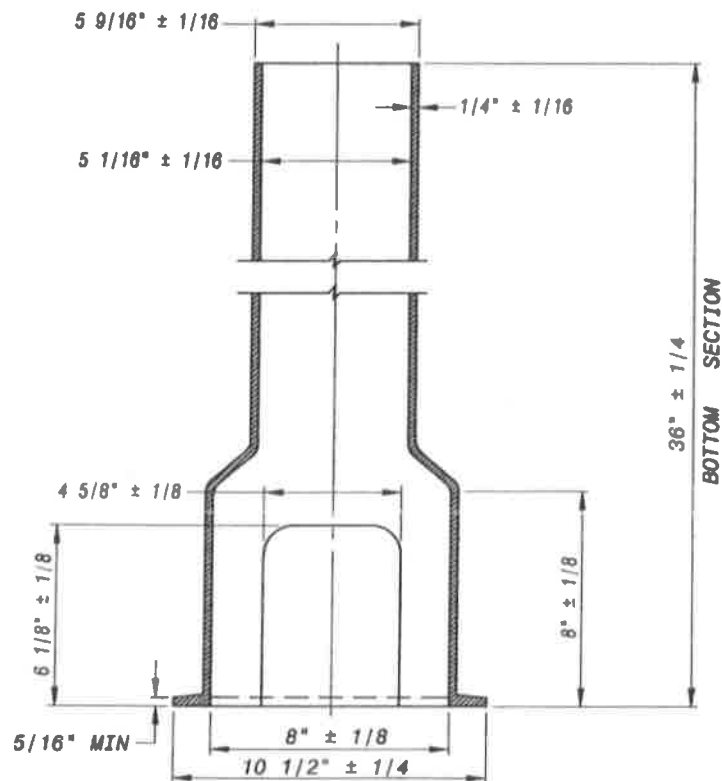
APPROVED: 3/17/16

[Signature]
MATERIAL AND SERVICES GROUP LEADER

PROCUREMENT AND MANUFACTURING DETAIL

ADJUSTABLE VALVE
BOX ROUND HEAD
SLIDING TYPE

P&M
1.0



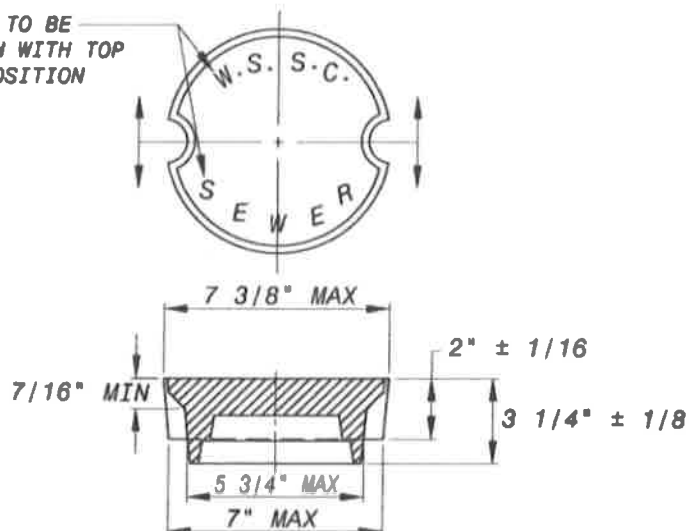
WEIGHT: 47 LBS

- SECTION TO BE GRAY IRON CASTING, ASTM A-48 CLASS NO. 25 MIN.
- CASTINGS ARE TO BE CLEANED BY AN APPROVED PROCESS AND COATED WITH AN APPROVED ASPHALTUM OR COAL TAR PAINT.

APPLICABLE STOCK NO.
4881-9007-5

<p>WASHINGTON SUBURBAN SANITARY COMMISSION</p>	<p>REVISIONS: APPROVED: <i>[Signature]</i> 10/24/14 MATERIAL AND SERVICES GROUP LEADER</p>	<p>PROCUREMENT AND MANUFACTURING DETAIL ADJUSTABLE VALVE BOX BOTTOM SECTION WITH CUTOUT</p>	<p>P&M 1.1</p>
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LETTERING TO BE
CAST FLUSH WITH TOP
OF LID. POSITION
AS SHOWN



COVER

WEIGHT : 12 1/2 LBS MIN.

- SECTION TO BE GRAY IRON CASTING, ASTM A-48 CLASS NO. 25 MIN.
- ALL CASTINGS ARE TO BE CLEANED BY AN APPROVED PROCESS AND COATED WITH AN APPROVED ASPHALTUM OR COAL TAR PAINT.

APPLICABLE STOCK NO.
4881-9006-7

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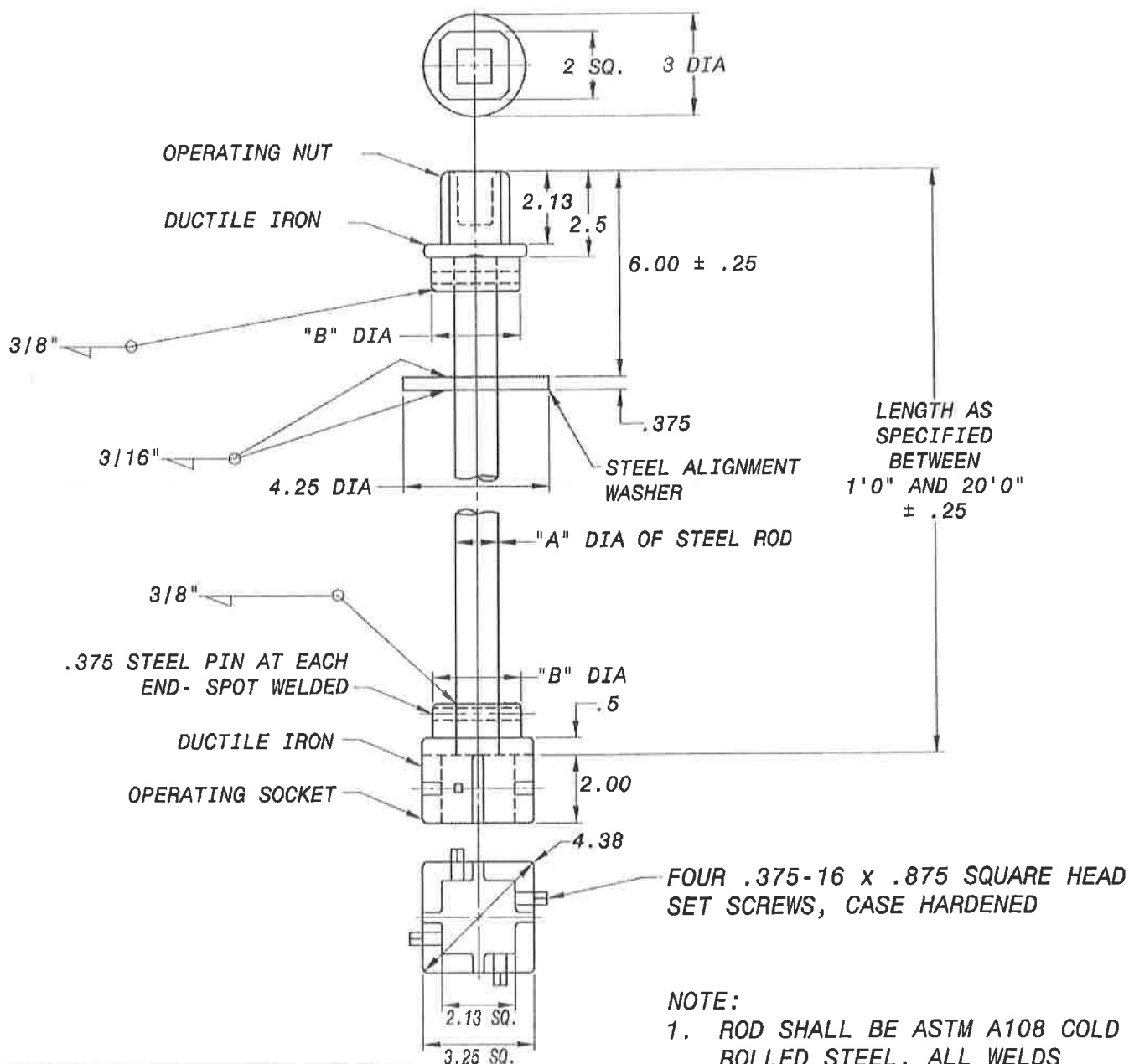
"A" DIAMETER OF STEEL ROD: 1-1/4"

"B" DIAMETER: 2"

APPLICABLE STOCK NO'S.

4840-0001-3

THRU-0007-0



ALL DIMENSIONS ARE IN
INCHES OTHERWISE SPECIFIED.

TOLERANCES:

ALL 2 PLACE DECIMALS $\pm .06$
ALL 3 PLACE DECIMALS $\pm .062$

NOTE:

1. ROD SHALL BE ASTM A108 COLD ROLLED STEEL. ALL WELDS SHALL BE RADIUS 1/2"
2. APPROVED ALTERNATE DESIGN: KRAVITCH MACHINE CO. MODEL NO. GVENOXXCR
3. SHALL BE CLEANED AND COATED BY AN APPROVED PROCESS AND COATING(2 COATS)

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APPROVED: *7 MARCH 2016*

MATERIAL AND SERVICES GROUP LEADER

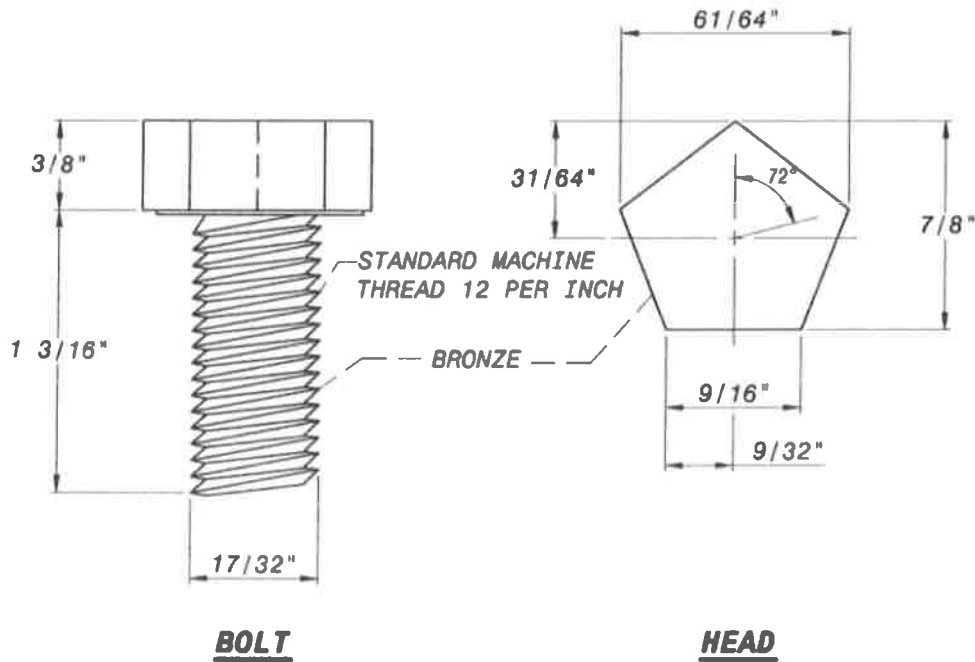
J.A. GARCIA

PROCUREMENT AND MANUFACTURING DETAIL

**VALVE EXTENSION
STEM FOR VALVE
BOXES**

**P&M
1.4**

(REVISED 3/2016) P&M1.4



CURB BOX BOLT

NOT TO SCALE

FORGED ALLOY HIGH SILICON BRONZE MIN. TENSILE STRENGTH = 65,000 PSI
MIN. YIELD STRENGTH = 38,000 PSI

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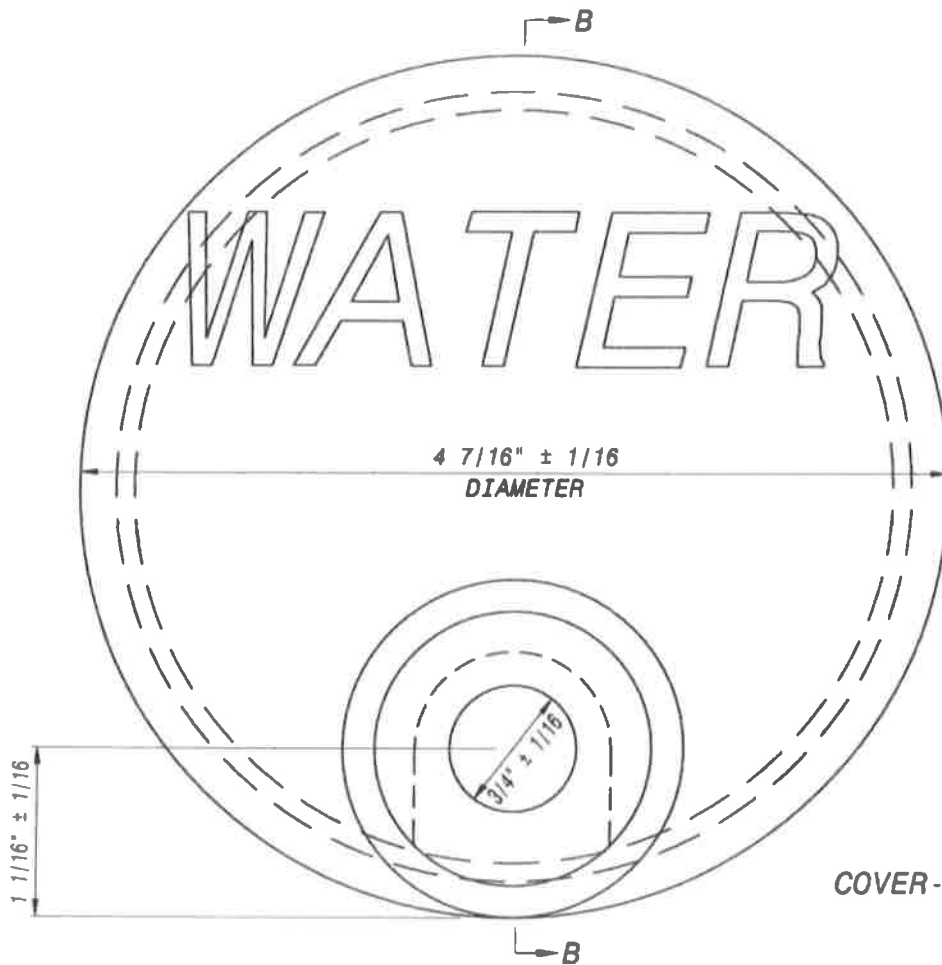
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10/27/14
MATERIAL AND SERVICES GROUP LEADER

PROCUREMENT AND MANUFACTURING DETAIL

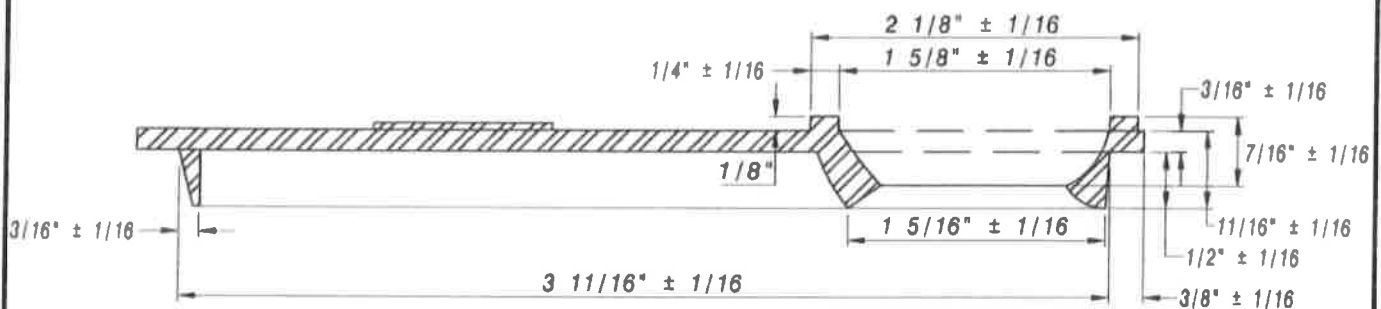
CURB BOX BOLT

P&M
2.0



WEIGHT
COVER-1.1 LBS. MIN.

CURB BOX COVER



SECTION B-B

CASTING TO BE CLEANED BY AN
APPROVED PROCESS AND COATED
WITH AN APPROVED ASPHALTUM OR
COAL TAR PAINT

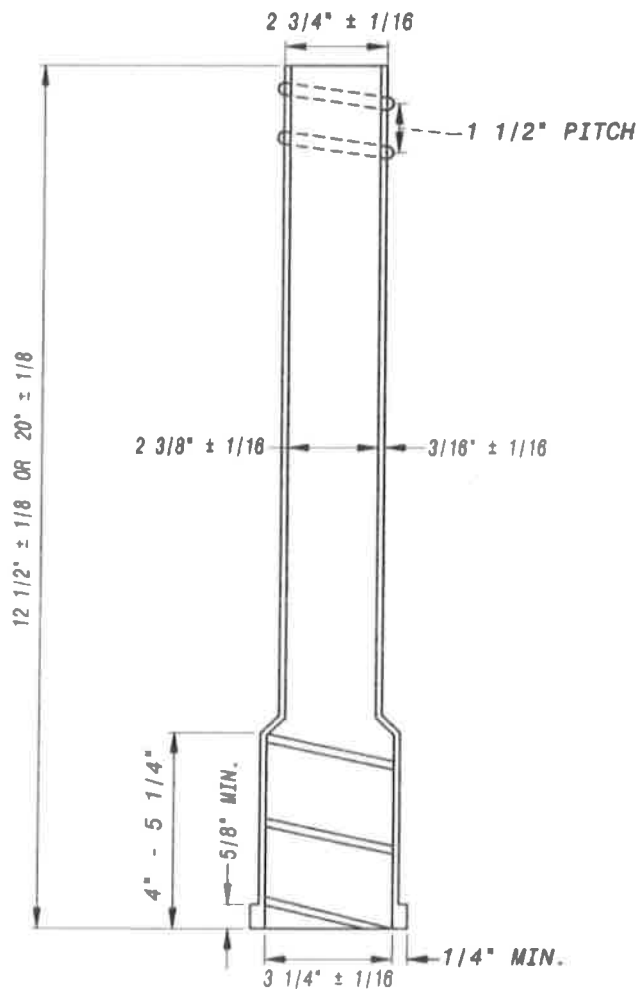
ALL SECTIONS SHOWN TO BE
GRAY IRON CASTINGS, ASTM.
A-48 CLASS NO. 25 MIN.

<p>WASHINGTON SUBURBAN SANITARY COMMISSION</p>	<p>REVISIONS: APPROVED: <i>[Signature]</i> 10/28/14 MATERIAL AND SERVICES GROUP LEADER</p>	<p>PROCUREMENT AND MANUFACTURING DETAIL</p> <p>CURB BOX COVER</p>	<p>P&M 2.2</p>
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APPLICABLE STOCK NOS.

4880-9004-4

4880-9005-1



WEIGHT

CURB BOX EXTENSION

EXTENSION- 8 1/2 LBS. MIN.

ALL SECTIONS SHOWN TO BE GRAY
IRON CASTINGS, ASTM. A-48
CLASS NO.25 MIN.

CASTING SHALL BE CLEANED BY AN
APPROVED PROCESS AND COATED
WITH AN APPROVED ASPHALTUM OR
COAL TAR PAINT

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APPROVED:

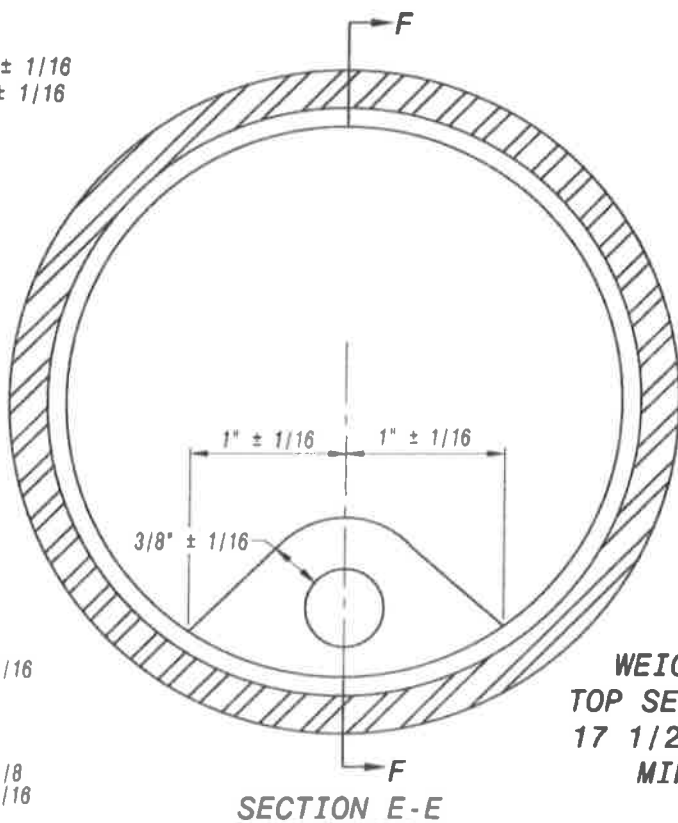
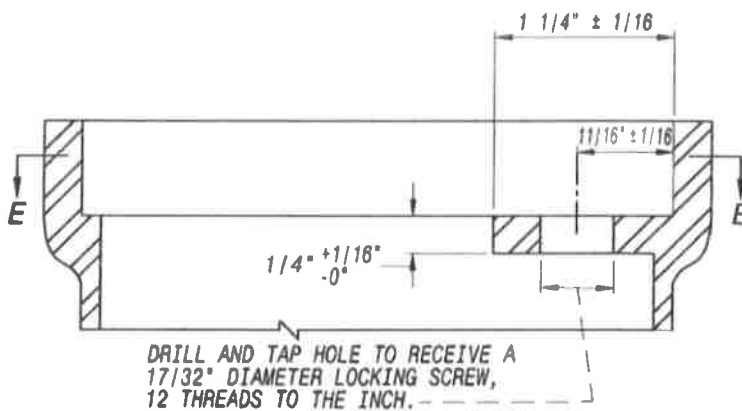
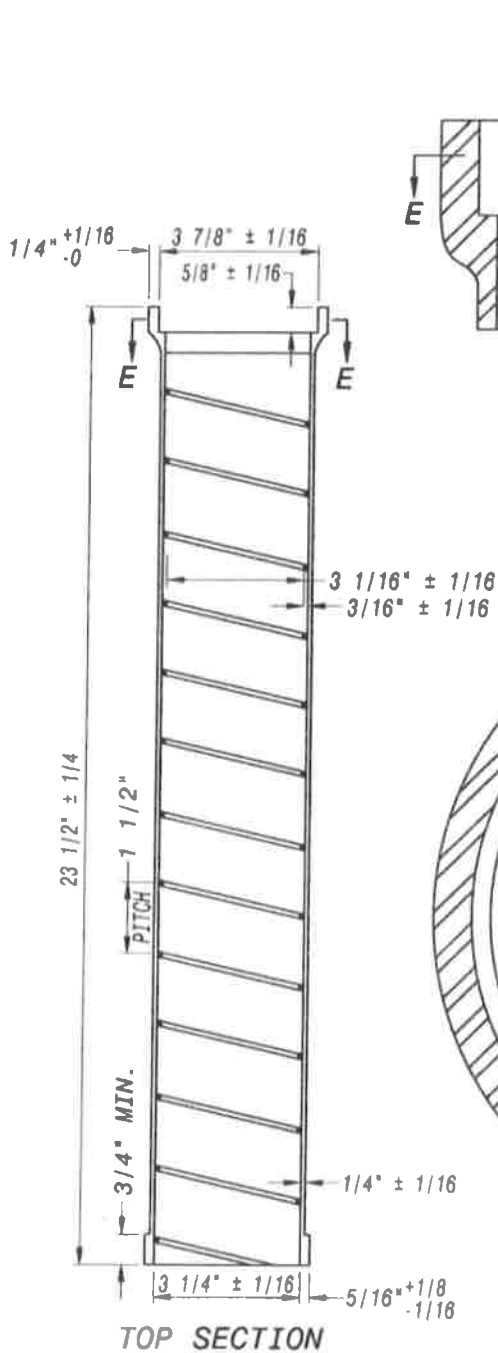
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10/28/14
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PROCUREMENT AND MANUFACTURING DETAIL

CURB BOX EXTENSION

P&M
2.3

P&M2.3



**WEIGHT
TOP SECTION
17 1/2 LBS.
MIN.**

- ALL CASTINGS ARE TO BE CLEANED BY AN APPROVED PROCESS AND COATED WITH AN APPROVED ALSPHALTUM OR COAL TAR PAINT.

- ALL SECTIONS SHOWN TO BE GRAY IRON CASTINGS, ASTM. A-48 CLASS NO.25 MIN.

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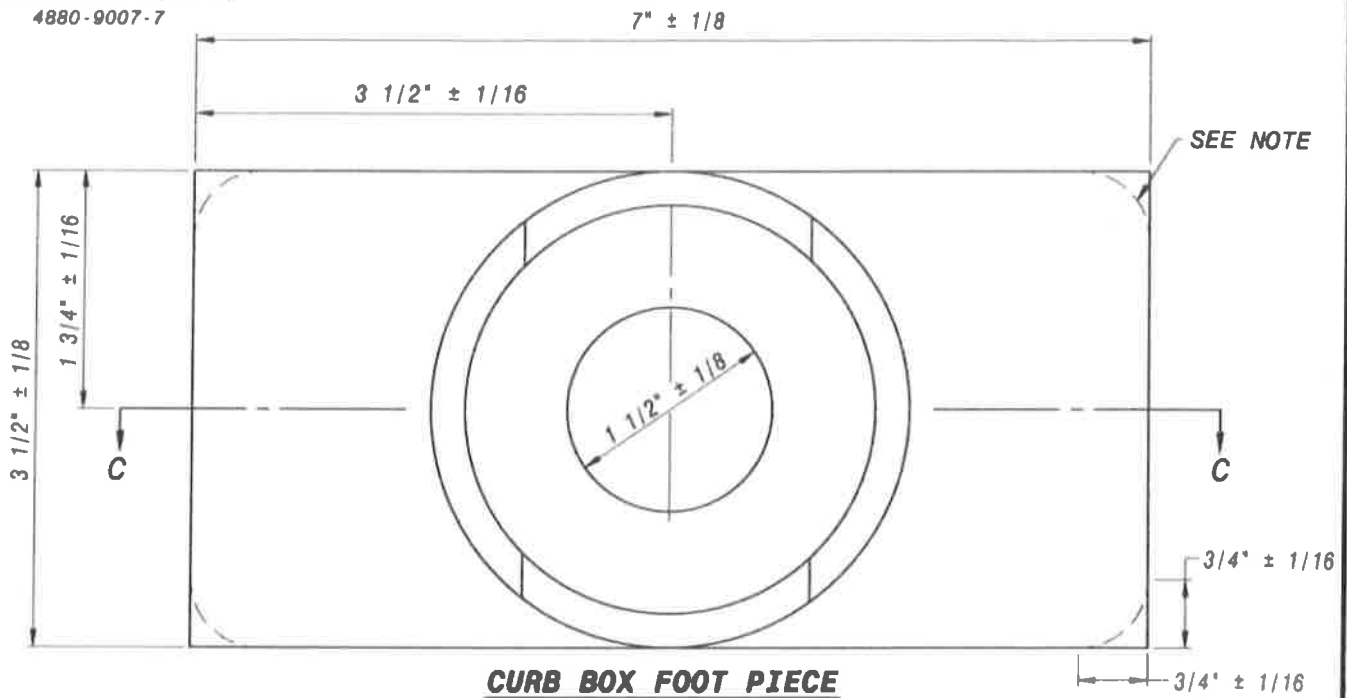
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PROCUREMENT AND MANUFACTURING DETAIL

CURB BOX TOP SECTION

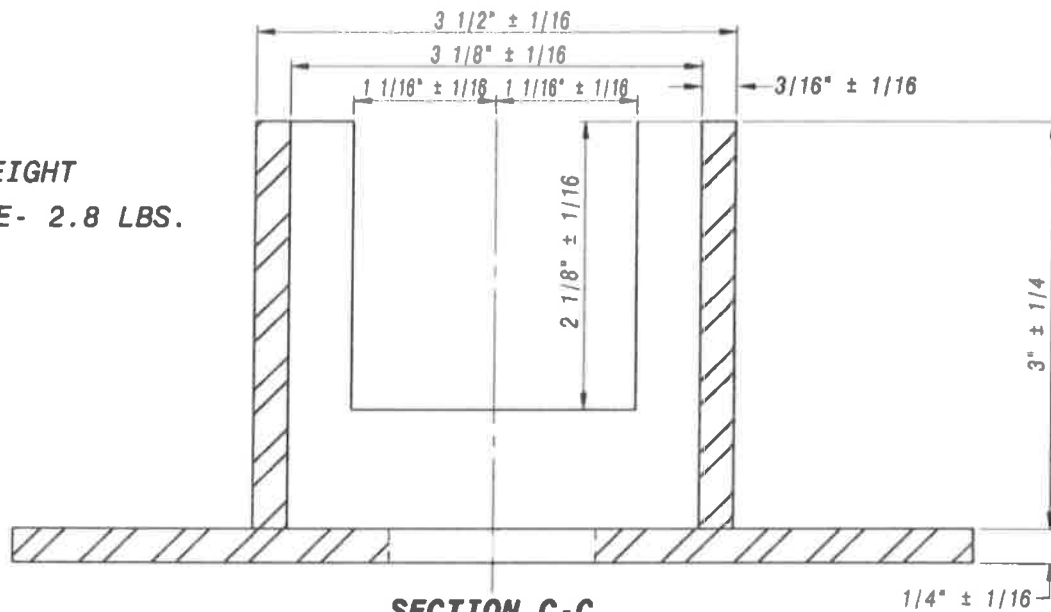
**P&M
2.4**

APPLICABLE STOCK NO.
4880-9007-7



CURB BOX FOOT PIECE

WEIGHT
FOOT PIECE- 2.8 LBS.
MIN.



SECTION C-C

NOTE:

IF MANUFACTURERES MOLDS HAVE ROUNDED CORNERS THEY WILL BE ACCEPTABLE WITHIN THE LIMITS SHOWN.

ALL SECTIONS SHOWN TO BE GRAY IRON CASTINGS, ASTM.A-48 CLASS NO.25 MIN.

CASTINGS SHALL BE CLEANED BY AN APPROVED PROCESS AND COATED WITH AN APPROVED ASHPALTUM OR COAL TAR PAINT

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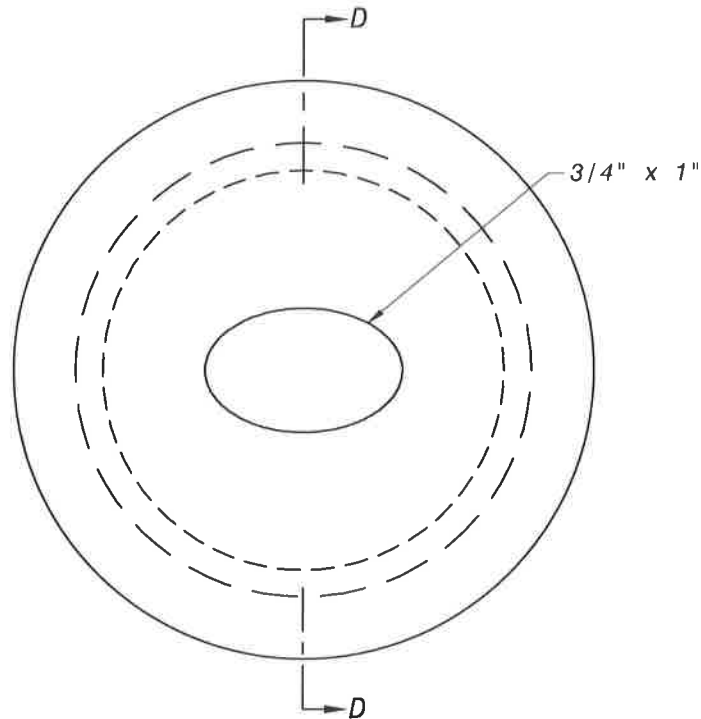
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PROCUREMENT AND MANUFACTURING DETAIL

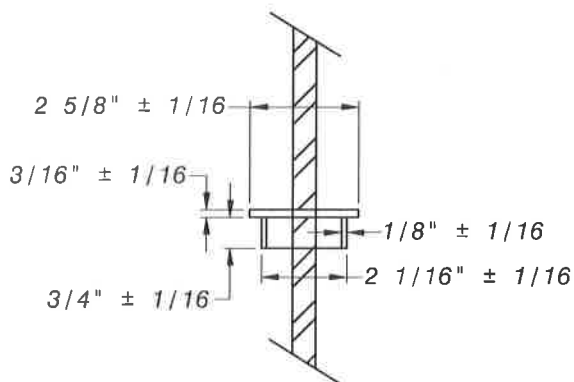
CURB BOX FOOT PIECE

P&M
2.5



CURB BOX GUIDE RING

NOTE: DEPICTION OF CURBBOX ROD
SHOWN IS SUPERSEDED



SECTION D-D
CURB BOX ROD GUIDE

- GUIDE RING TO BE GRAY IRON CASTINGS, ASTM. A-48 CLASS NO.25 MIN.
- CASTING SHALL BE CLEANED BY AN APPROVED PROCESS AND COATED WITH AN APPROVED ASPHALTIC OR COAL TAR PAINT.

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APPROVED: *3/17/16*

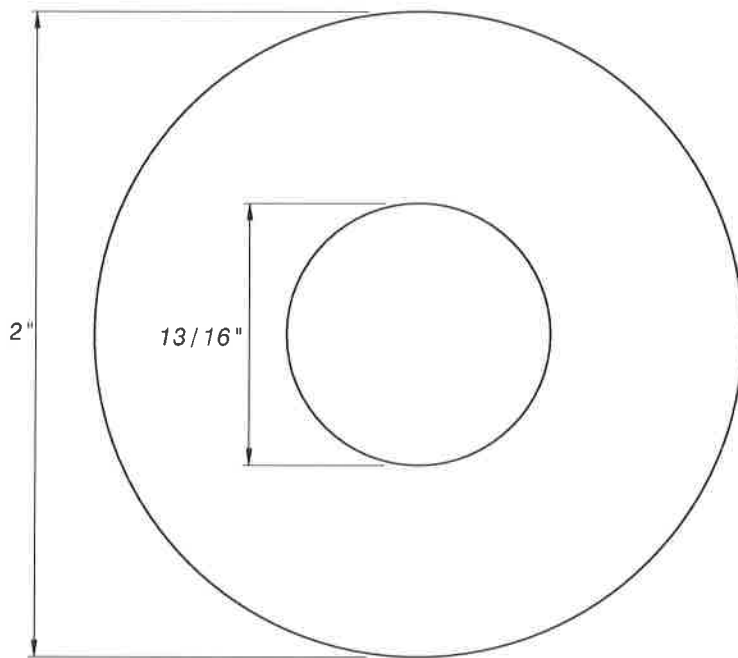
[Signature]
MATERIAL AND SERVICES GROUP LEADER

PROCUREMENT AND MANUFACTURING DETAIL

**CURB BOX ROD
AND GUIDE RING**

**P&M
2.7**

APPLICABLE STOCK NO.
5310-9400-1



MATERIAL:
LOW ALLOY STEEL IN
ACCORDANCE WITH ASTM A307,
LATEST REVISION
THICKNESS: 1/4"

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REVISIONS:

APPROVED:

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3/17/16

MATERIAL AND SERVICES GROUP LEADER

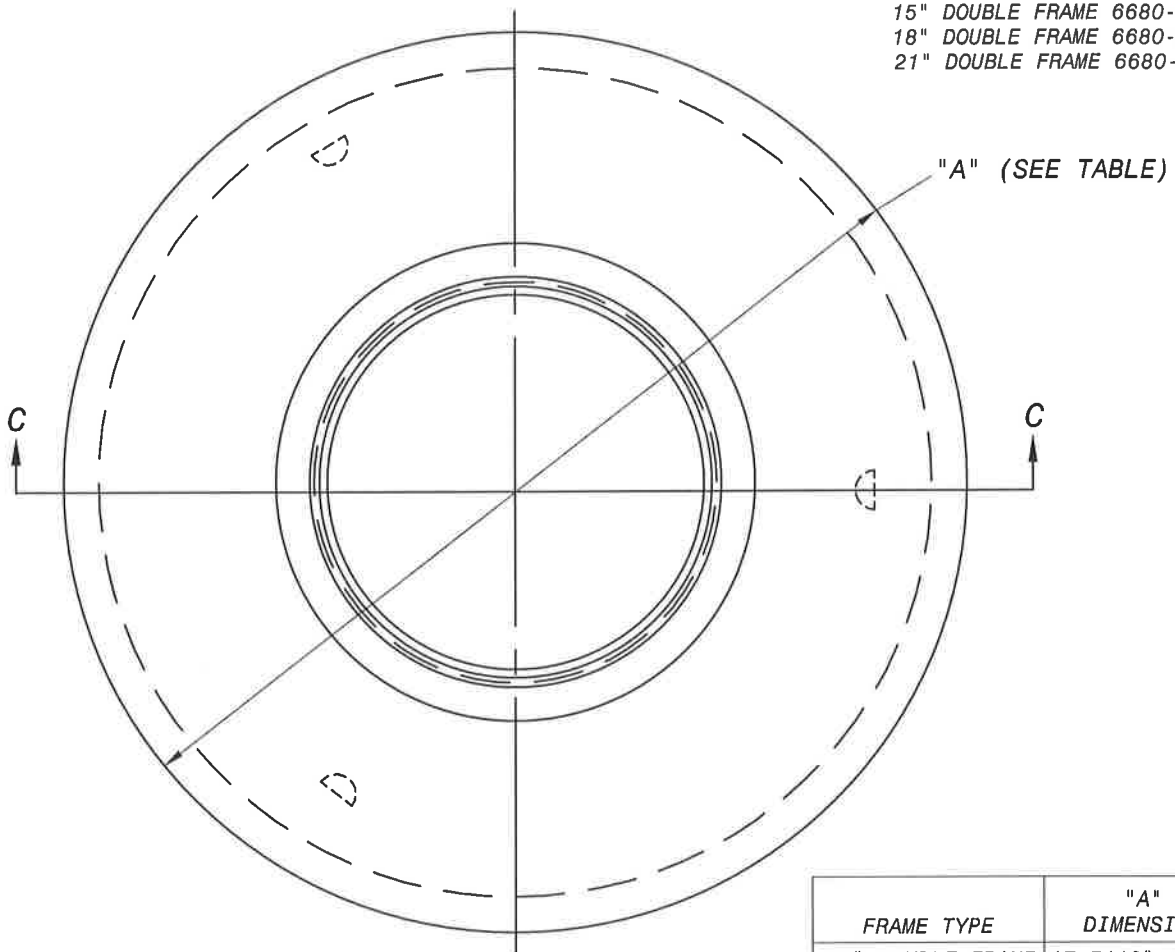
PROCUREMENT AND MANUFACTURING DETAIL

**MANHOLE FRAME WASHER,
NOMINAL DIAMETER 3/4"**

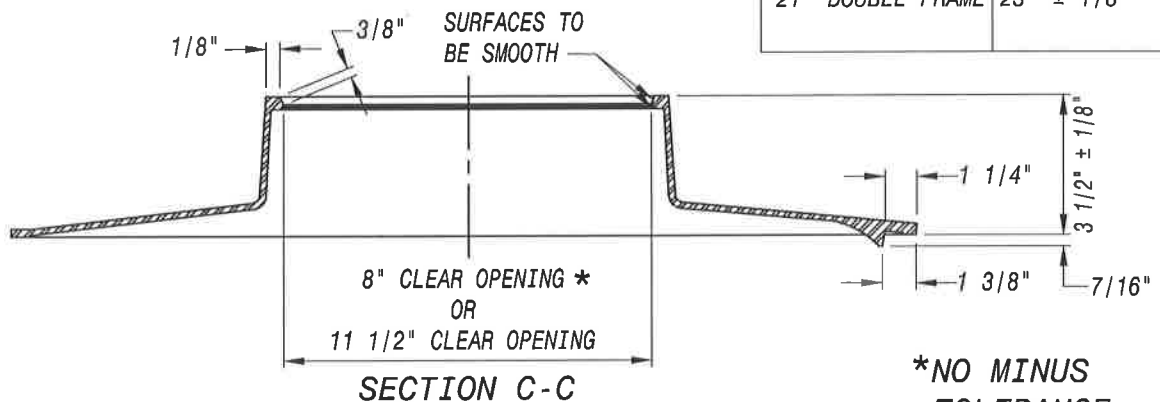
**P&M
3.0**

(REVISED 3/2016) P&M3.0

APPLICABLE STOCK NOS.
 15" DOUBLE FRAME 6680-9040-0
 18" DOUBLE FRAME 6680-9041-8
 21" DOUBLE FRAME 6680-9042-6



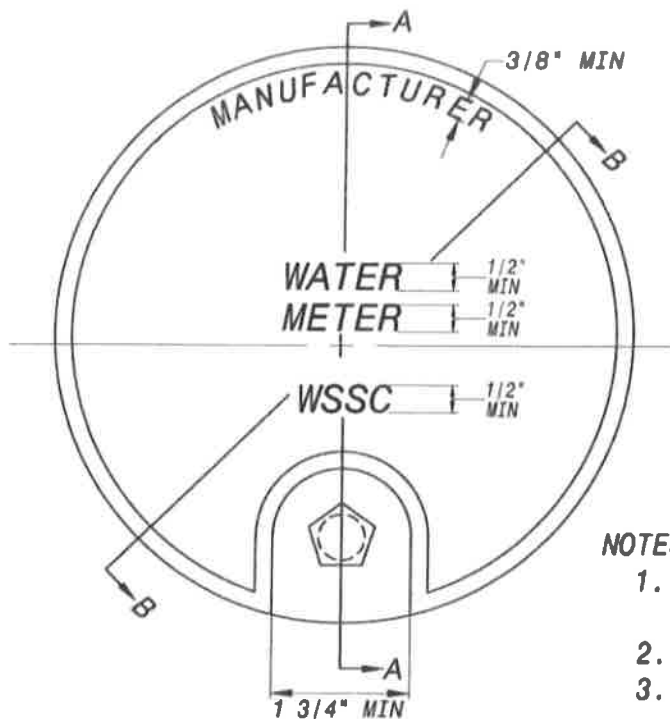
FRAME TYPE	"A" DIMENSION
15" DOUBLE FRAME	17 5/16" ± 1/8
18" DOUBLE FRAME	20" ± 1/8
21" DOUBLE FRAME	23" ± 1/8



NOTE:

1. ALL GRAY IRON CASTINGS TO BE ASTM A-48 CLASS 25 MIN.
2. SEE P&M/4.1 FOR WEIGHTS
3. TOLERANCE OF +/- 1/16" UNLESS NOTED OTHERWISE
4. CASTING SHALL BE CLEANED BY AN APPROVED PROCESS AND COATED WITH AN APPROVED ASPHALTUM OR COAL TAR PAINT.

WASHINGTON SUBURBAN SANITARY COMMISSION	REVISIONS:	PROCUREMENT AND MANUFACTURING DETAIL	P&M 4.0
	APPROVED: <i>[Signature]</i> 3/17/16 MATERIAL AND SERVICES GROUP LEADER		
		METER FRAMES FOR 15", 18" AND 21" METER HOUSING	



TOP VIEW
(TYP SINGLE AND DOUBLE)
(NOT TO SCALE)

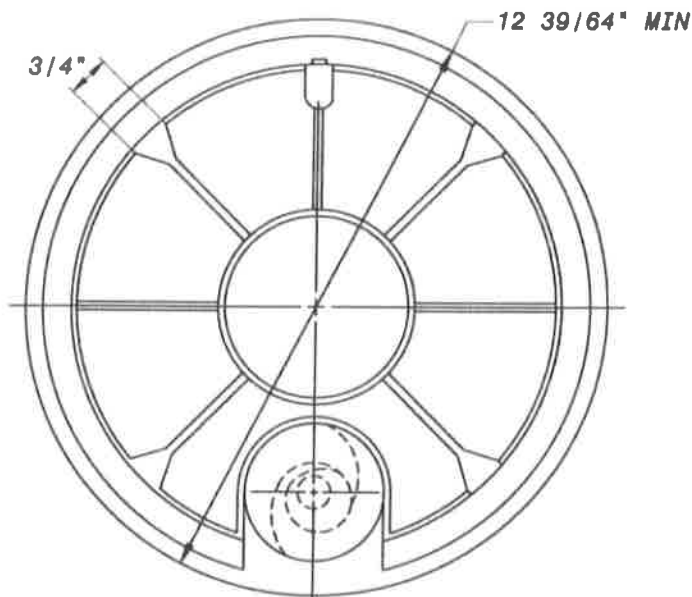
WEIGHT	
15" DOUBLE FRAME	12 3/4 LBS MIN
18" SINGLE FRAME	20 1/4 LBS MIN
18" DOUBLE FRAME	18 1/4 LBS MIN
21" DOUBLE FRAME	28 1/2 LBS MIN
SINGLE LID	4 3/4 LBS MIN
DOUBLE LID	10 3/4 LBS MIN

ALL GRAY IRON CASTINGS TO BE
ASTM A48 CLASS 25 MIN.

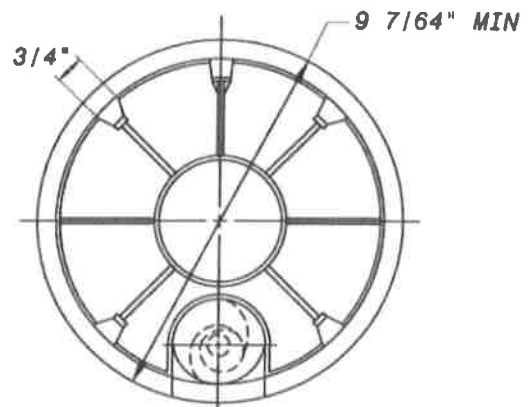
APPLICABLE STOCK NOS.
SINGLE COVER 6680-9031-9
DOUBLE COVER 6680-9030-1

NOTES:

1. TOLERANCE OF $\pm 1/16"$ UNLESS NOTED OTHERWISE
2. SEE P&M/4.2 FOR FURTHER DETAILS
3. ALL LETTERS AND EDGES ON TOP RAISED $1/32"$
4. CASTING SHALL BE CLEANED BY AN APPROVED PROCESS AND COATED WITH AND APPROVED ASPHALTUM OR COAL TAR PAINT.



BOTTOM VIEW DOUBLE COVER
(NOT TO SCALE)



BOTTOM VIEW SINGLE COVER
(NOT TO SCALE)

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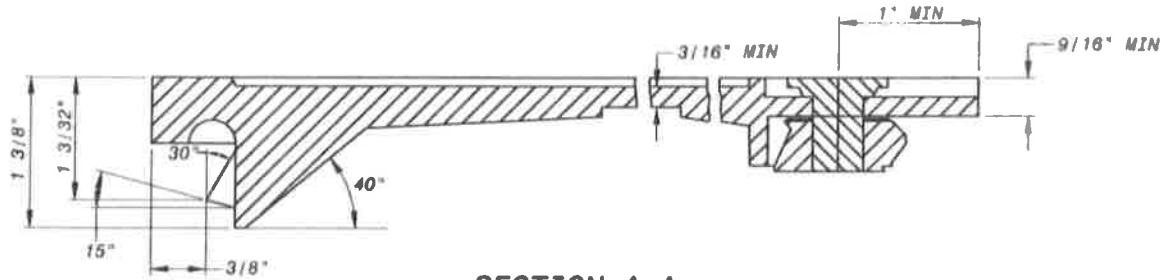
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10/28/14
MATERIAL AND SERVICES GROUP LEADER

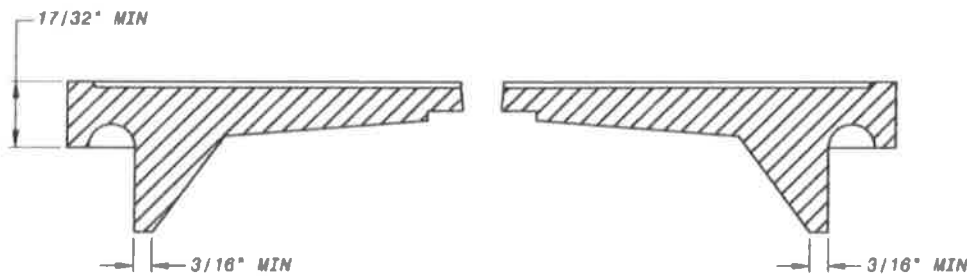
PROCUREMENT AND MANUFACTURING DETAIL

**SINGLE AND DOUBLE
METER COVERS**

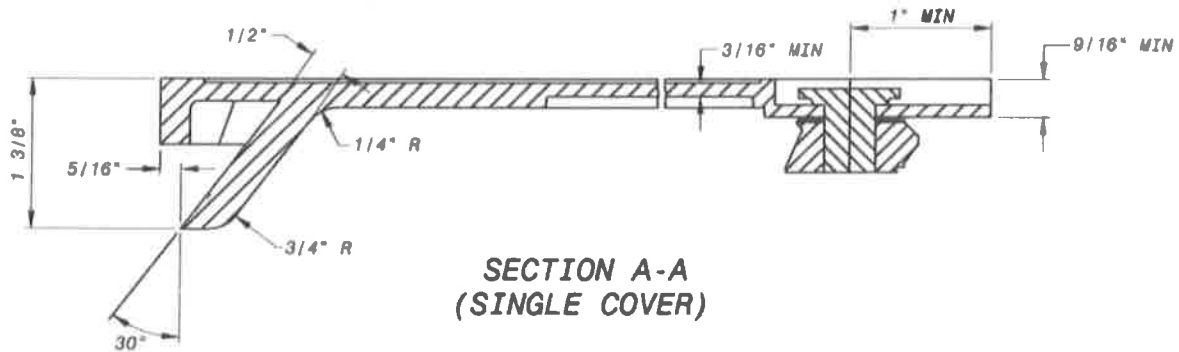
**P&M
4.1**



**SECTION A-A
(DOUBLE COVER)**



**SECTION B-B
(TYP SINGLE COVER AND DOUBLE COVER)**



**SECTION A-A
(SINGLE COVER)**

NOTES:

1. ALL GRAY IRON CASTINGS TO BE ASTM A48 CLASS 25 MIN.
2. SEE P&M/4.1 FOR FURTHER DETAILS
3. TOLERANCE OF $\pm 1/16$ " UNLESS NOTED OTHERWISE
4. CASTING SHALL BE CLEANED BY AN APPROVED PROCESS AND COATED WITH AN APPROVED ASPHALTIC OR COAL TAR COATING

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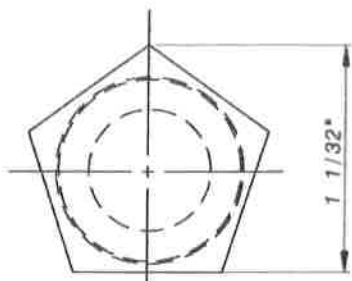
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10/28/14
MATERIAL AND SERVICES GROUP LEADER

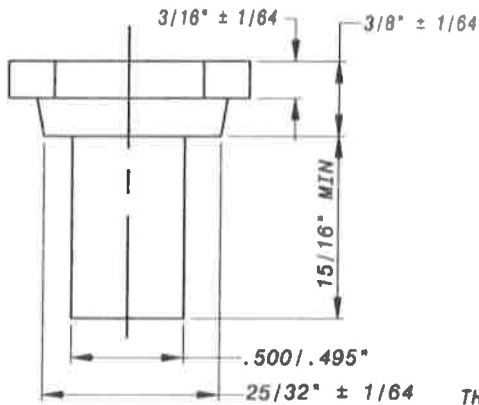
PROCUREMENT AND MANUFACTURING DETAIL

**SINGLE AND DOUBLE
METER COVERS**

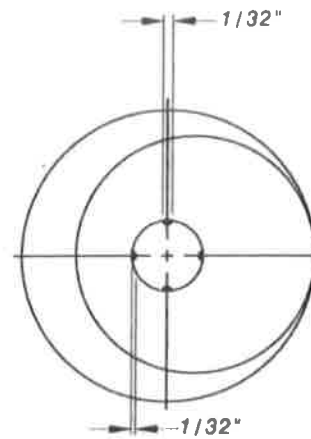
**P&M
4.2**



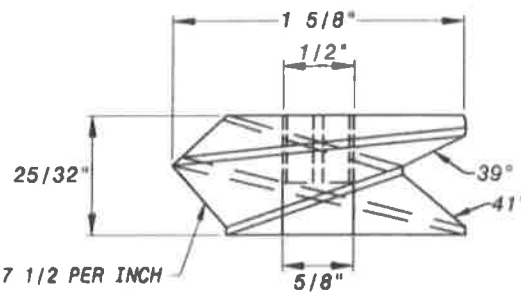
TOP VIEW
COPPER ALLOY



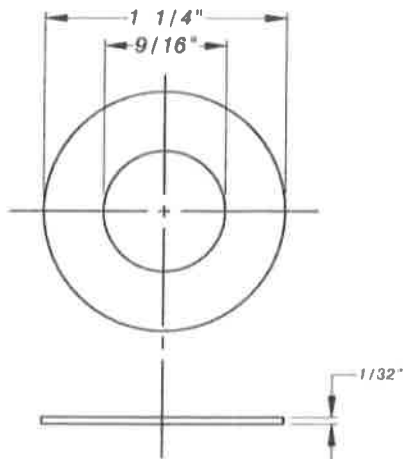
SIDE VIEW
PENTAGON HEAD BOLT



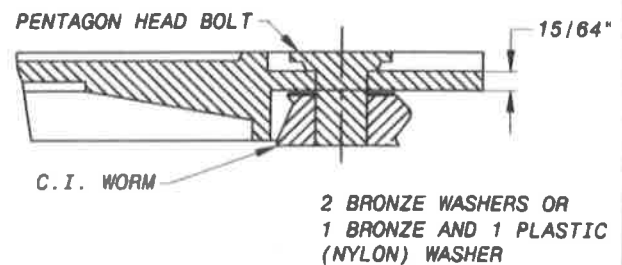
TOP VIEW



SIDE VIEW
CAST IRON WORM



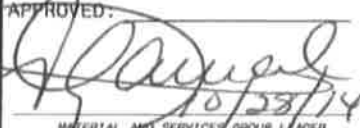
BRONZE OR PLASTIC WASHER



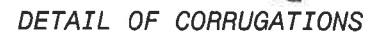
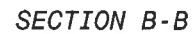
ASSEMBLED SECTION
OF LOCK

NOTES:

1. PENTAGON HEAD BOLT TO BE ATTACHED TO CAST IRON WORM BY MEANS OF 1/32" SPLINES CAST ON INTERIOR OF WORM. THE END OF THE BOLT SHALL BE SPLIT WITH A PUNCH, A SPLIT BOLT WILL NOT BE ACCEPTED.

WASHINGTON SUBURBAN SANITARY COMMISSION	REVISIONS: APPROVED:  10/23/14 MATERIAL AND SERVICE GROUP LEADER	PROCUREMENT AND MANUFACTURING DETAIL METER COVER PARTS	P&M 4.3
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5681-9002-9



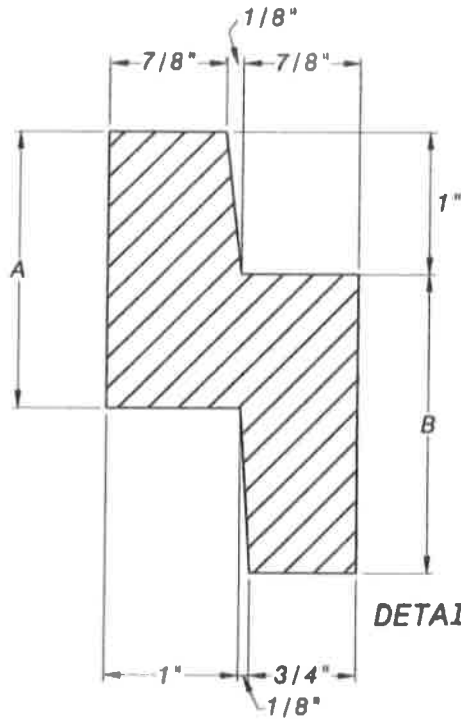
ALL SECTIONS SHOWN TO BE GRAY
IRON CASTINGS, ASTM A-48 CLASS
NO. 35B MIN.

P&M
5.0

(REVISED 3/2016) P&M5.0

APPLICABLE STOCK NOS.

5680-9001-3, 1 1/2"
5680-9002-1, 2"

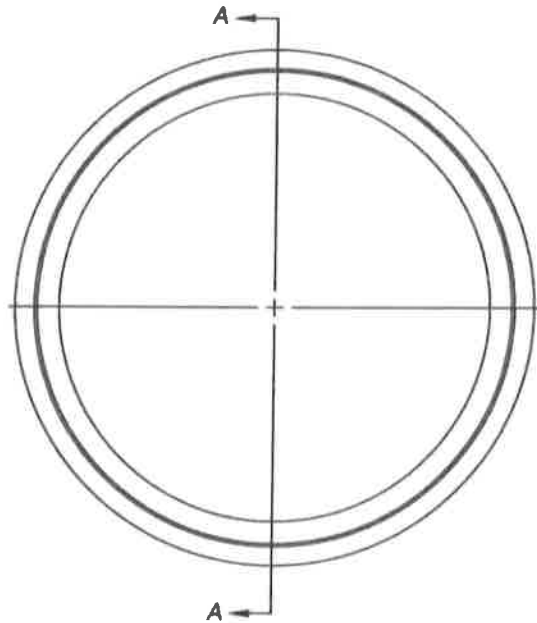


DETAIL A

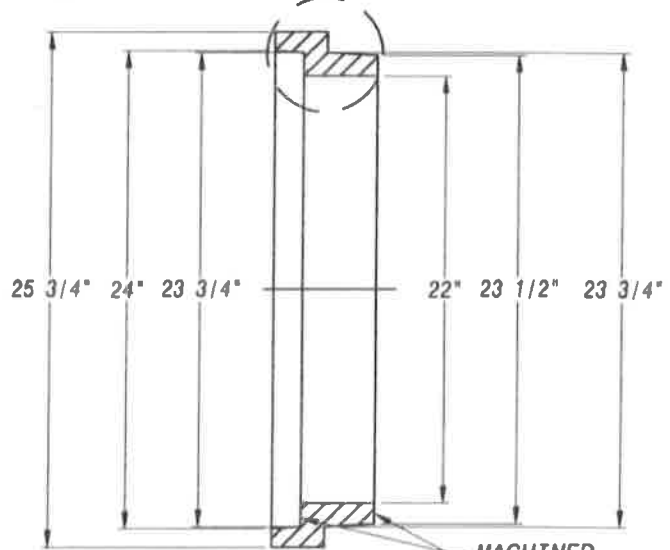
-SECTION TO BE GRAY IRON CASTING,
ASTM A-48 CLASS NO. 35B

-CASTING SHALL CONFORM TO AND
BE MANUFACTURED IN ACCORDANCE
WITH THE REQUIREMENTS OF AASHTO
STD M306, LATEST REVISION

NOMINAL RISE	A	B
1 1/2"	1 1/2"	3-1/8"
2"	2"	3-1/8"



SEE DETAIL A



SECTION A-A

MACHINED
SURFACE

ALL DIMENSION ARE IN INCHES
UNLESS OTHERWISE SPECIFIED.

TOLERANCES: $\pm 1/16$ "

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APPROVED:

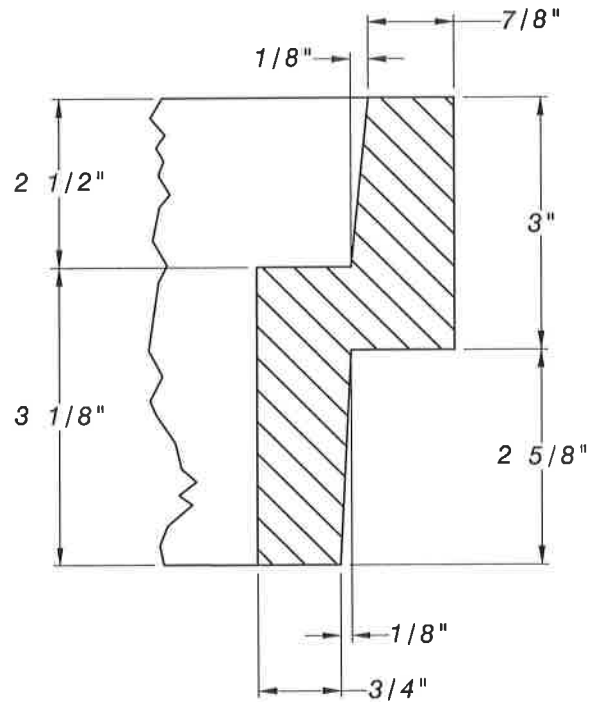
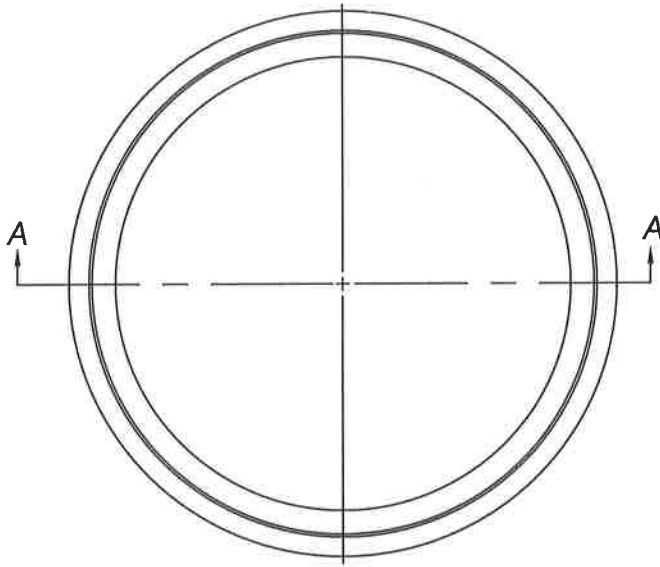
MATERIAL AND SERVICES GROUP LEADER

PROCUREMENT AND MANUFACTURING DETAIL

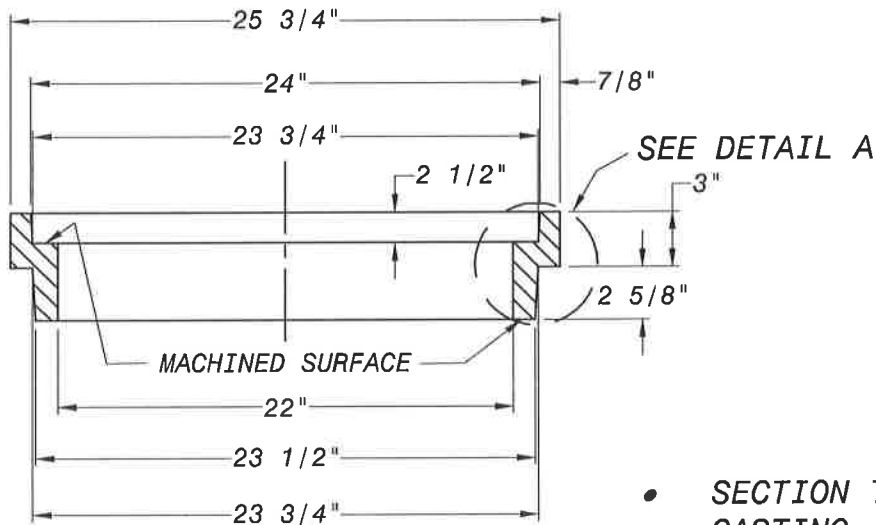
22-INCH NON-WATERTIGHT
MANHOLE ADJUSTING RING,
1 1/2" AND 2" HEIGHT

P&M
6.0

P&M6.0



DETAIL
A



SECTION A-A

ALL DIMENSION ARE IN INCHES
UNLESS OTHERWISE SPECIFIED.

TOLERANCES: $\pm 1/16$ "

- SECTION TO BE GRAY IRON CASTING, ASTM A-48 CLASS NO. 35B
- CASTING SHALL CONFORM TO AND BE MANUFACTURED IN ACCORDANCE WITH THE REQUIREMENTS OF AASHTO STD M306, LATEST REVISION

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REVISIONS:

APPROVED:

3/17/16

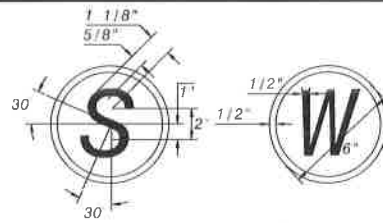
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MATERIAL AND SERVICES GROUP LEADER

PROCUREMENT AND MANUFACTURING DETAIL

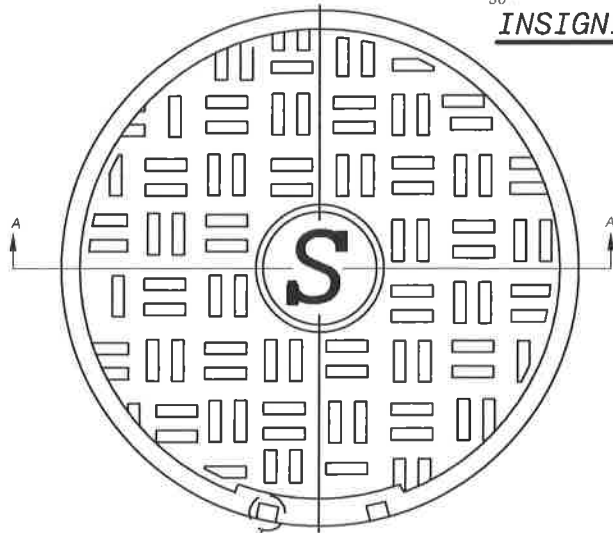
22-INCH NON-WATERTIGHT
MANHOLE ADJUSTING RING,
3" HEIGHT

P&M
6.1

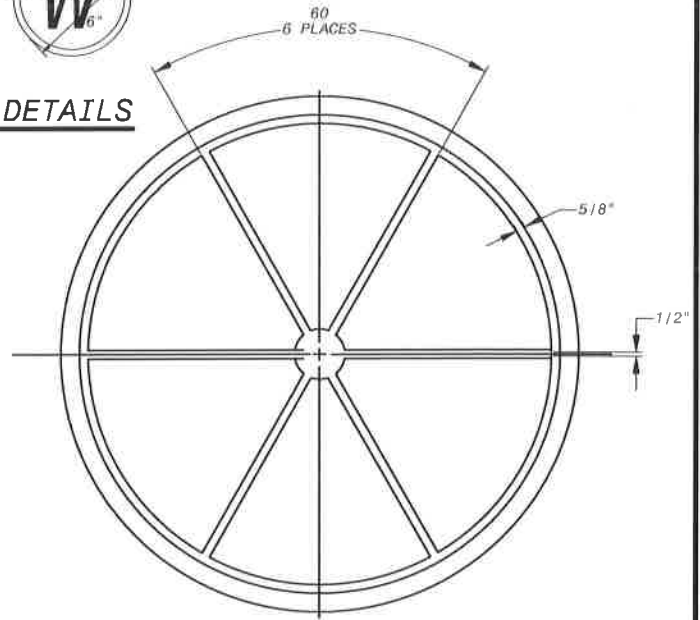
APPLICABLE STOCK NO.
5690-9004-7 (SEWER)



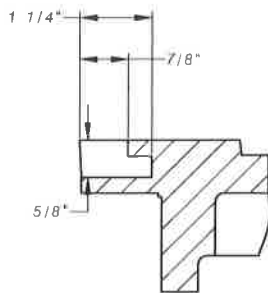
INSIGNIA DETAILS



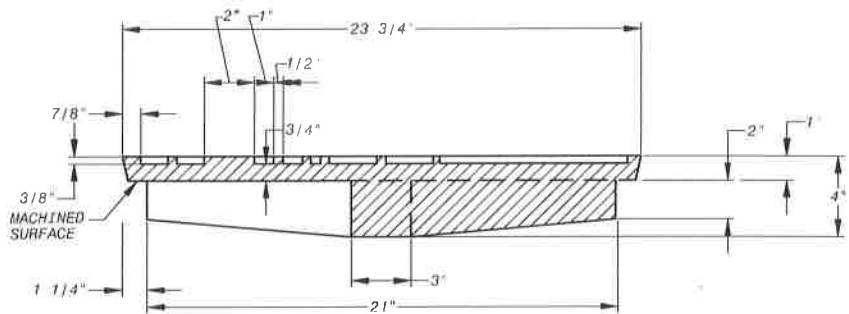
SEE DETAIL B TOP



BOTTOM



**DETAIL B
PICKHOLE**



SECTION A-A

SECTION TO BE GRAY IRON CASTING,
ASTM A-48 CLASS NO. 35B

CASTING SHALL CONFORM TO AND BE MANUFACTURED
IN ACCORDANCE WITH THE REQUIREMENTS OF
AASHTO STD M306, LATEST REVISION

NOTE: COVER FOR USE ONLY WITH THE FOLLOWING:
- 1 1/2\".

* AT THE MANUFACTURER'S OPTION, IN PLACE OF 6 RIBS,
60° APART, 8 RIBS CAN BE PLACED 45° APART.

ALL DIMENSION ARE IN INCHES
UNLESS OTHERWISE SPECIFIED.

TOLERANCES: $\pm 1/16$ "

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COMMISSION

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APPROVED:

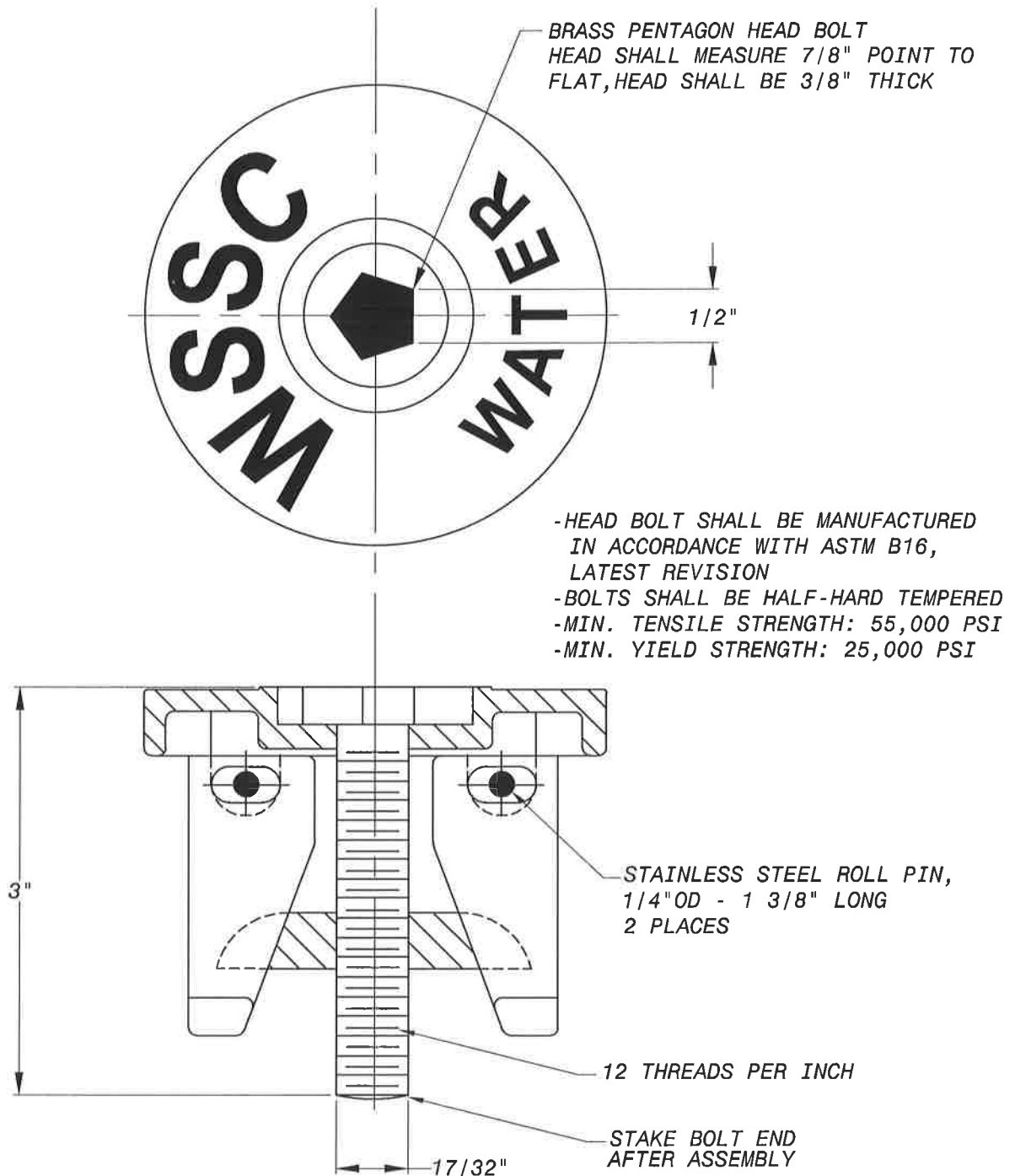
3/17/16
[Signature]
MATERIAL AND SERVICES GROUP LEADER

PROCUREMENT AND MANUFACTURING DETAIL

**22" MANHOLE ADJUSTING
RING COVER**

**P&M
6.2**

APPLICABLE STOCK NO.
4880-9035-8



REPAIR LID ASSEMBLY
SCALE: NONE

ALL DIMENSION ARE IN INCHES
UNLESS OTHERWISE SPECIFIED.

TOLERANCES: $\pm 1/16"$

CASTING SHALL BE CLEANED BY AN APPROVED
PROCESS AND COATED WITH AN APPROVED
ASPHALTUM OR COAL TAR PAINT

ASTM A48
CLASS NO.25

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COMMISSION

REVISIONS:

APPROVED: *3/17/16*

MATERIAL AND SERVICES GROUP LEADER

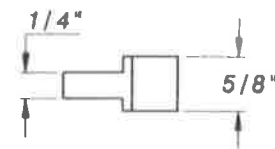
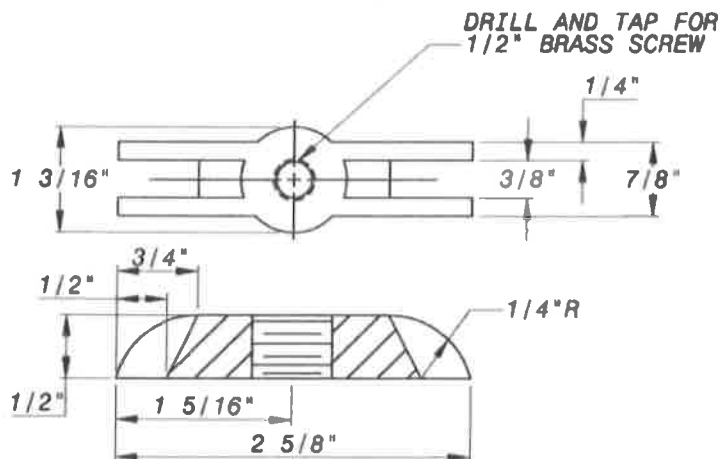
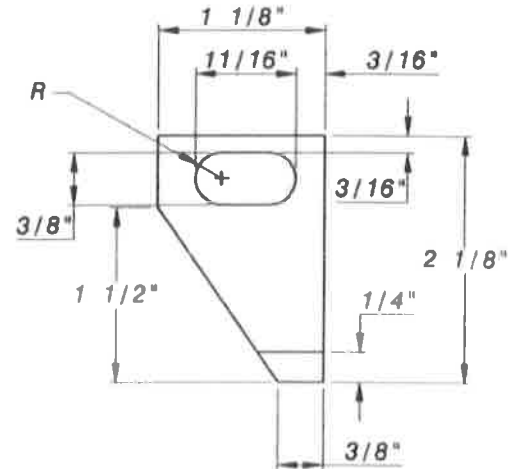
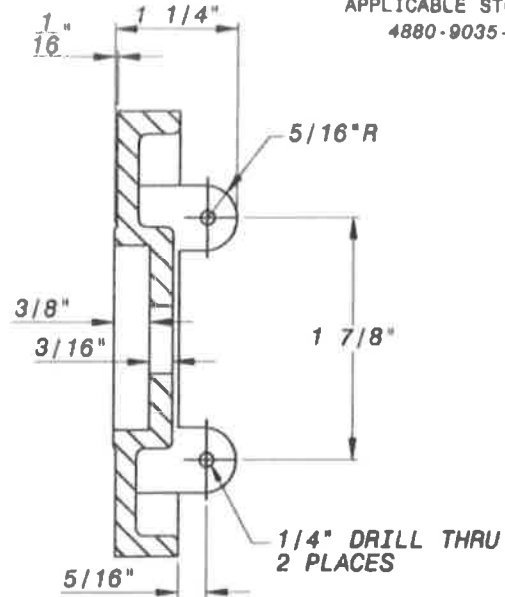
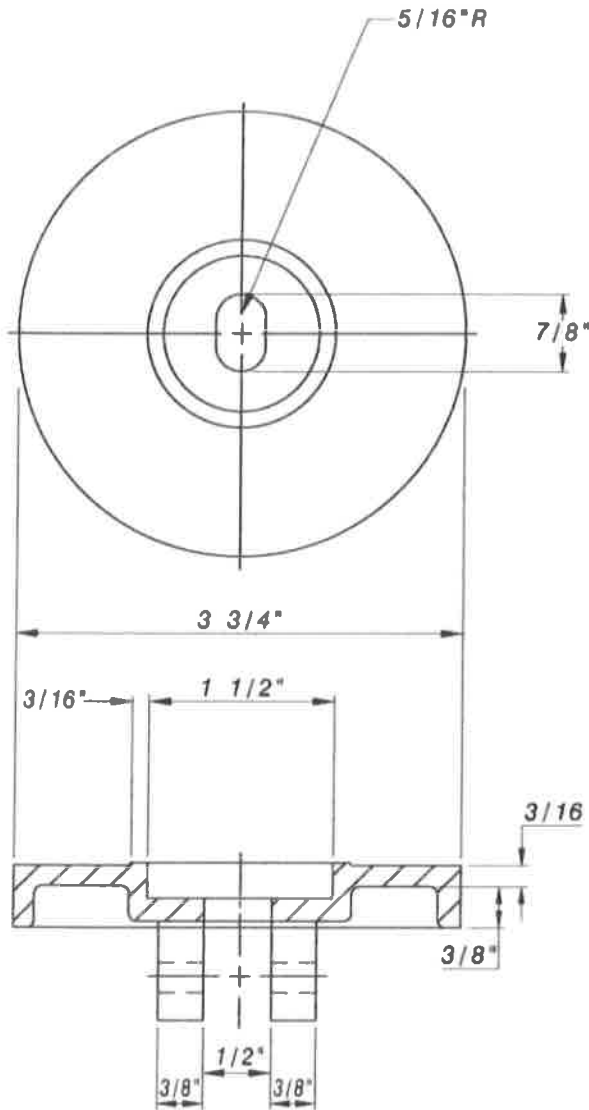
PROCUREMENT AND MANUFACTURING DETAIL

CURB BOX REPAIR LID
FOR PAVED AREAS
(ASSEMBLY)

P&M
7.0

(REVISED 3/2016) P&M7.0

APPLICABLE STOCK NO.
4880-9035-8



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REVISIONS:

APPROVED:

[Signature]
10/28/14
MATERIAL AND SERVICES GROUP LEADER

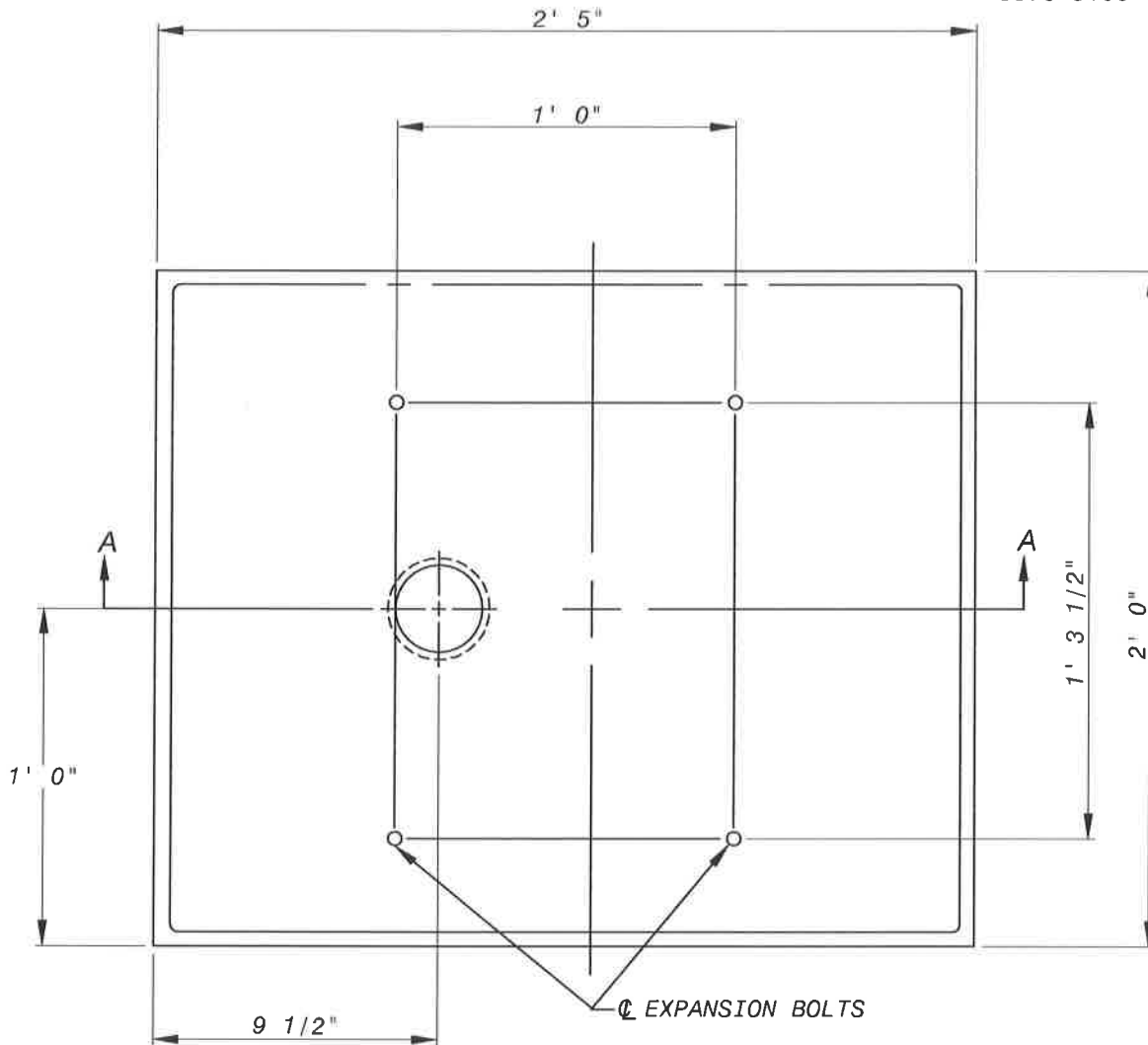
PROCUREMENT AND MANUFACTURING DETAIL

**CURB BOX REPAIR LID
FOR PAVED AREAS
(DETAILS)**

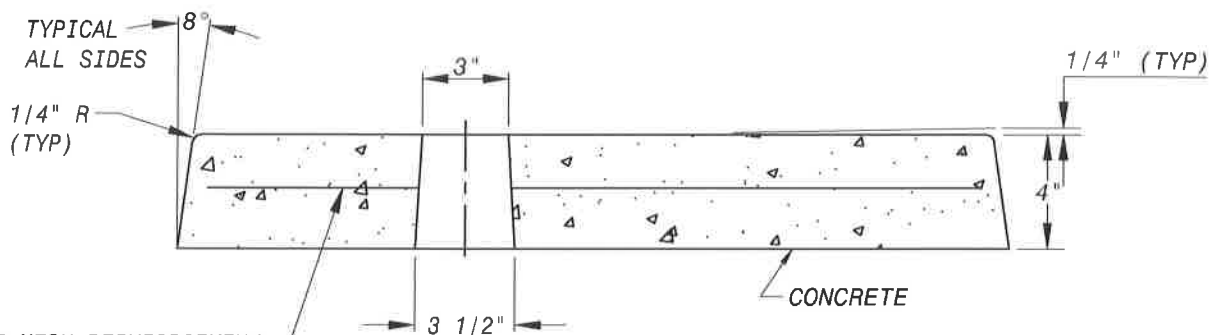
**P&M
7.1**

P&M7.1

APPLICABLE STOCK NOS.
5676-9100-1



TOP VIEW



SECTION A-A

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APPROVED: 3/17/16

MATERIAL AND SERVICES GROUP LEADER

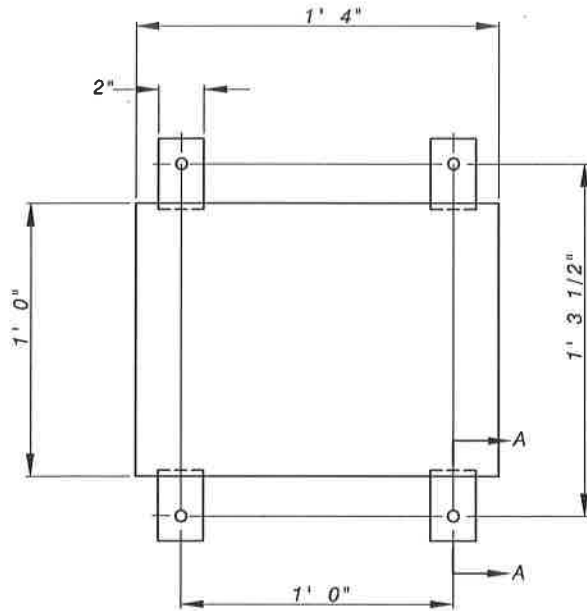
PROCUREMENT AND MANUFACTURING DETAIL

AIR RELEASE PIPE VENT
BOX BASE PAD

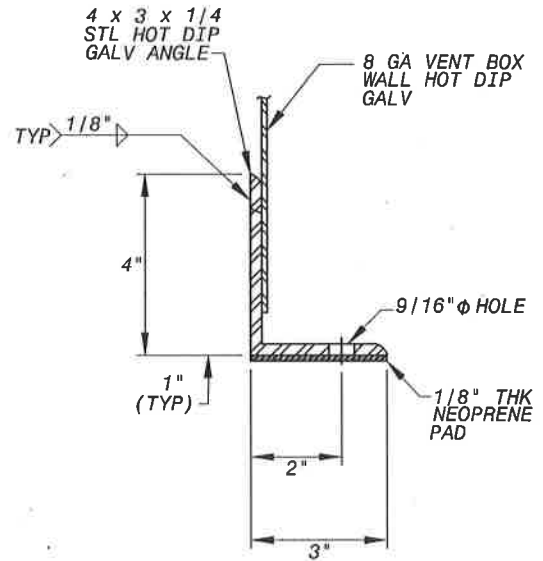
P&M
8.0

(REVISED 3/2016) P&M8.0

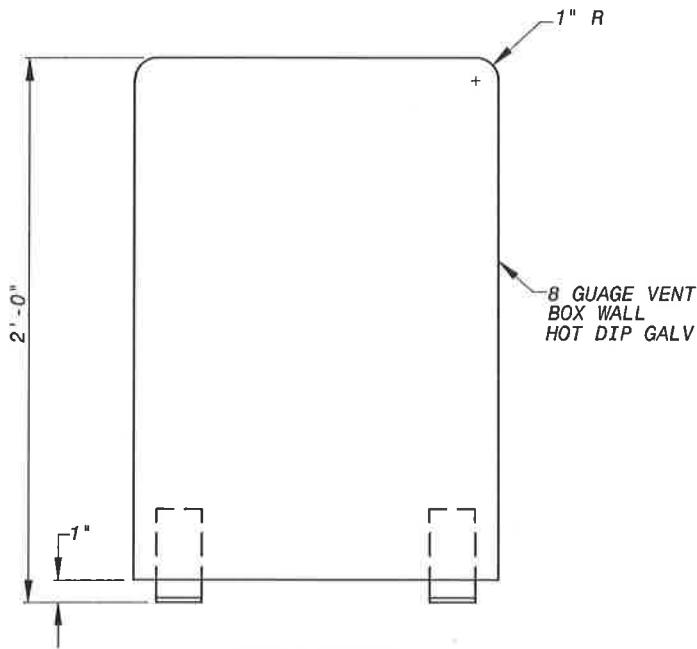
APPLICABLE STOCK NO.
5676-9150-6



TOP VIEW



SECTION A-A



SIDE VIEW

NOTE:
GALVANIZE THE BOX
AFTER FABRICATION
AND WELDING OF STEEL
ANGLES.

SEE MATERIALS
SPECIFICATION FOR
REQUIRED MARKINGS.

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COMMISSION

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APPROVED: 3/17/16

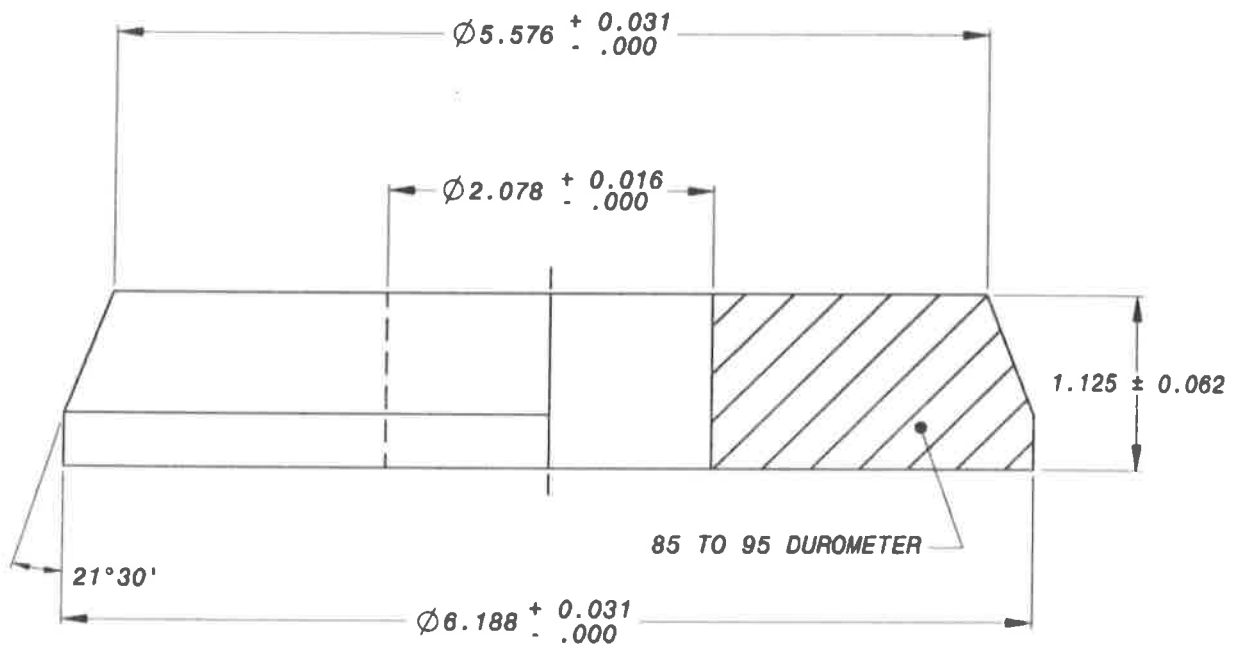
MATERIAL AND SERVICES GROUP LEADER

PROCUREMENT AND MANUFACTURING DETAIL

AIR RELEASE
PIPE VENT BOX

P&M
8.5

(REVISED 3/2016) P&M8.5



WASHINGTON SUBURBAN SANITARY COMMISSION	REVISIONS: APPROVED: <i>[Signature]</i> 10/28/14 MATERIAL AND SERVICES GROUP LEADER	PROCUREMENT AND MANUFACTURING DETAIL MAIN VALVE FOR IMPROVED L.D. WOOD MATHEWS ADAPTOR TYPE FIRE HYDRANT	P&M 9.0
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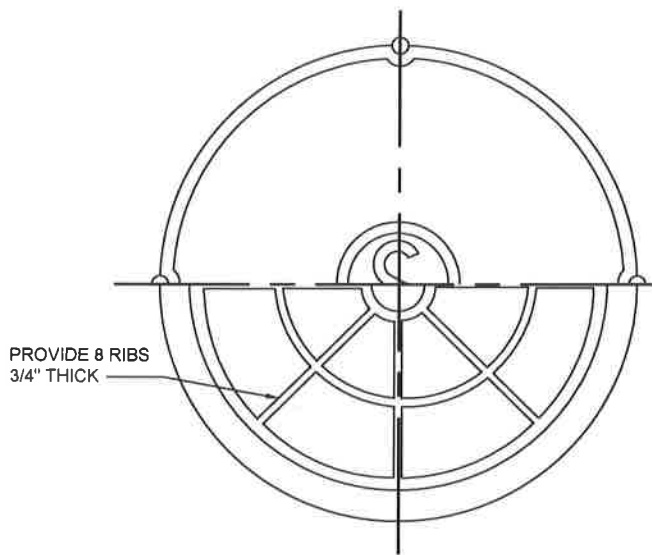
APPLICABLE STOCK NOS.

5680-9026-0

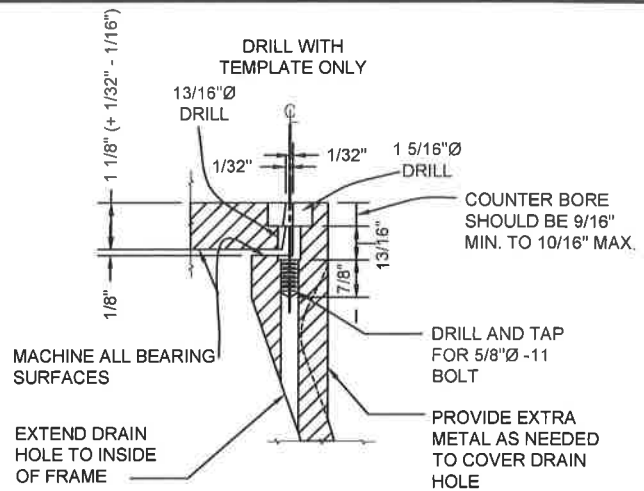
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5680-9029-4

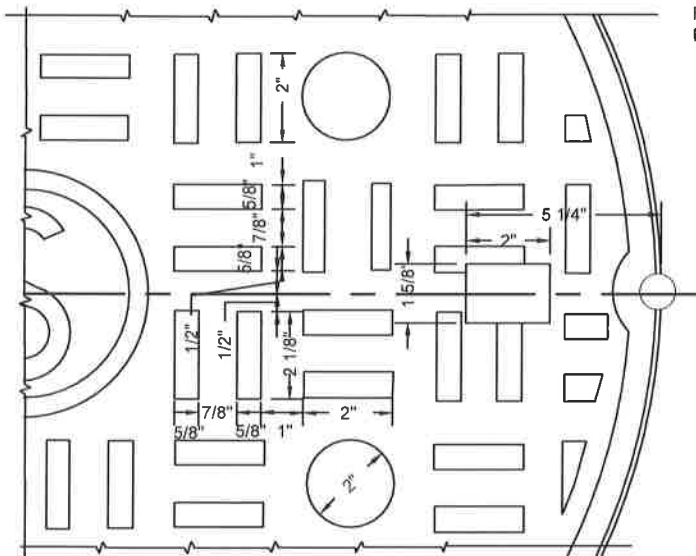
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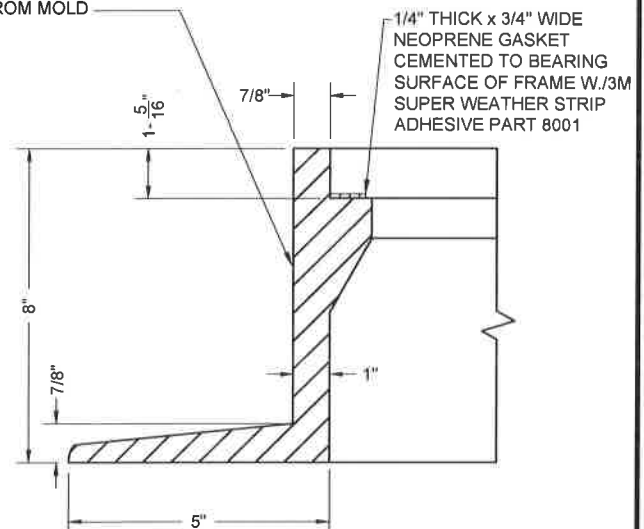
BOTTOM VIEW



SECTION A-A



PROVIDE APPROPRIATE
DRAFT TO ENABLE
REMOVAL OF PATTERN
FROM MOLD



SECTION OF RING

MATERIAL SPECIFICATION:

GRAY IRON ASTM A48 CL35B

CASTINGS SHALL CONFORM TO AND BE MANUFACTURED
IN ACCORDANCE WITH THE REQUIREMENTS OF AASHTO
STD M306, LATEST REVISION

REFERENCE WSSC DWG NO. 721471Y, LATEST REVISION 1-29-81

SEE DETAIL P&M 10.1b
FOR CONTINUATION

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SANITARY
COMMISSION

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APPROVED:

3/17/16
[Signature]
MATERIAL AND SERVICES GROUP LEADER

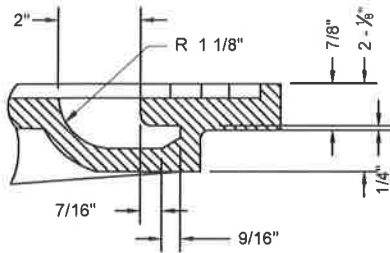
PROCUREMENT AND MANUFACTURING DETAIL

LOCKING TYPE-WATERTIGHT
30" MANHOLE FRAME & COVER

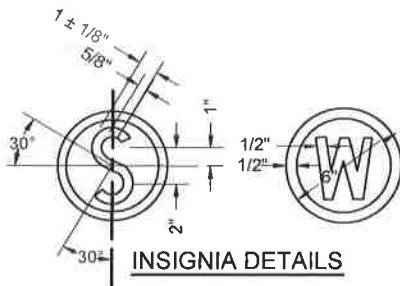
P&M
10.1a

APPLICABLE STOCK NOS.

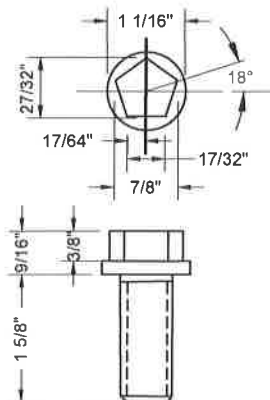
5680-9026-0 5680-9029-4
5680-9051-8 5680-9060-9



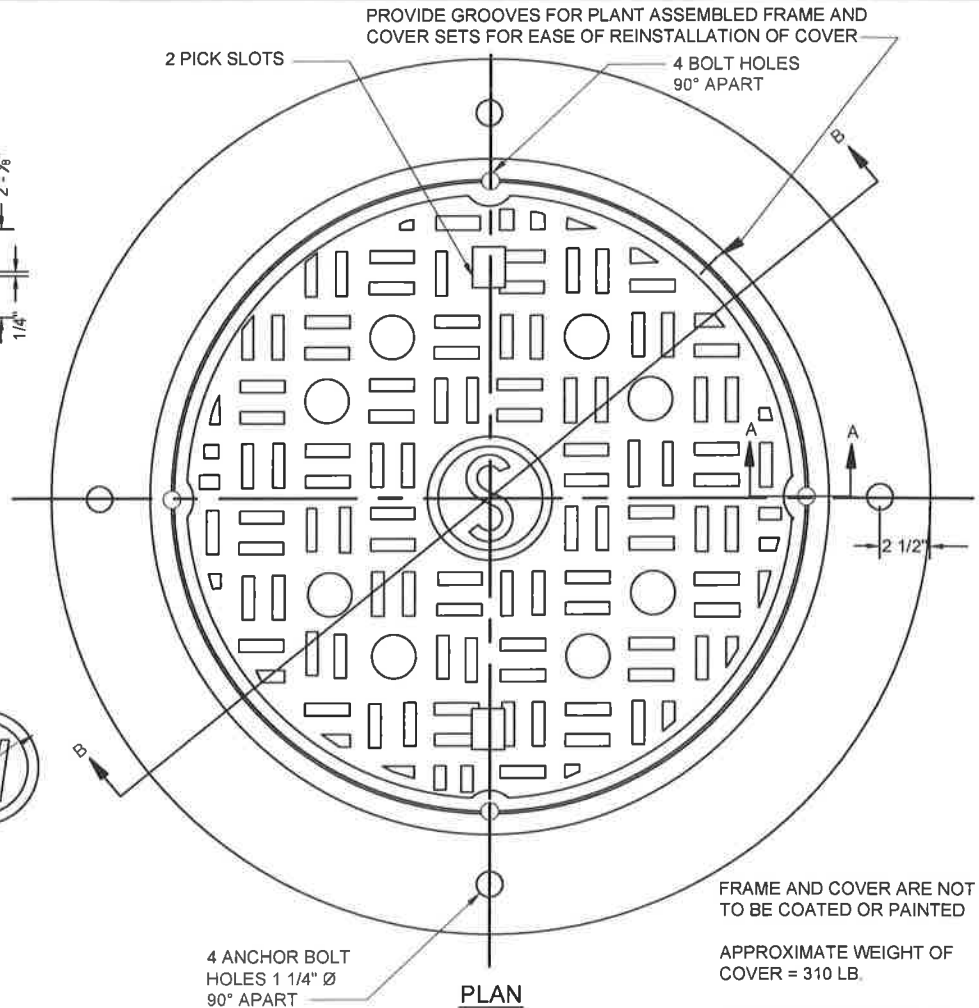
PICKHOLE DETAIL



INSIGNIA DETAILS



STAINLESS STEEL
LOCK BOLT
AISI TYPE 304
STAINLESS STEEL

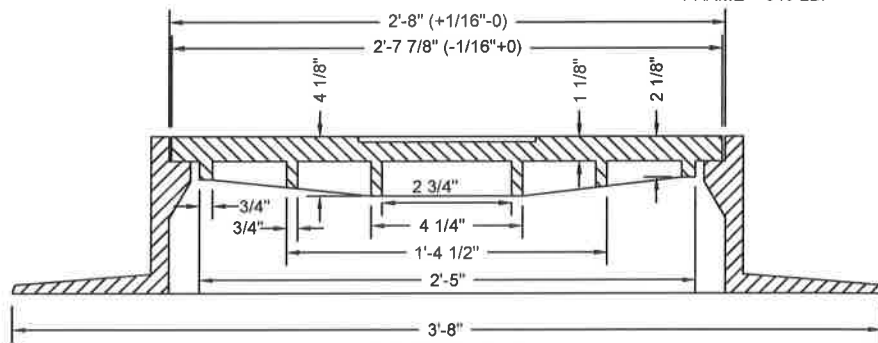


PLAN

FRAME AND COVER ARE NOT
TO BE COATED OR PAINTED

APPROXIMATE WEIGHT OF
COVER = 310 LB.

APPROXIMATE WEIGHT OF
FRAME = 340 LB.



SECTION B-B

SEE DETAIL P&M 10.1a
FOR CONTINUATION

MATERIAL SPECIFICATION:
GRAY IRON ASTM A48 CL35B

CASTINGS SHALL CONFORM TO AND BE MANUFACTURED
IN ACCORDANCE WITH THE REQUIREMENTS OF AASHTO
STD M306, LATEST REVISION

REFERENCE WSSC DWG NO. 721471Y, LATEST REVISION 1-29-81

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SANITARY
COMMISSION

REVISIONS:

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MATERIAL AND SERVICES GROUP LEADER

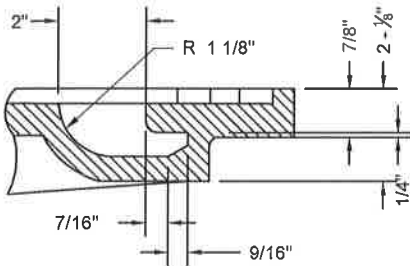
PROCUREMENT AND MANUFACTURING DETAIL

LOCKING TYPE-WATERTIGHT
30" MANHOLE FRAME & COVER

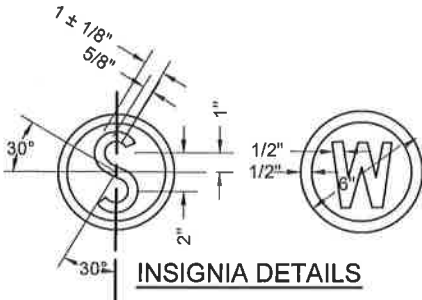
P&M
10.1b

(REVISED 3/2016) P&M10.1b

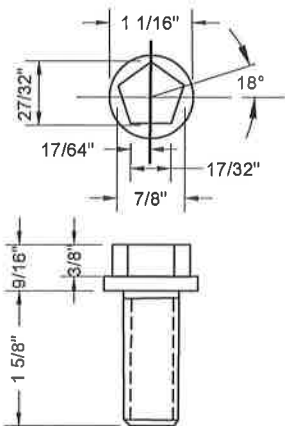
APPLICABLE STOCK NOS.
 5680-9026-0 5680-9029-4
 5680-9051-8 5680-9060-9



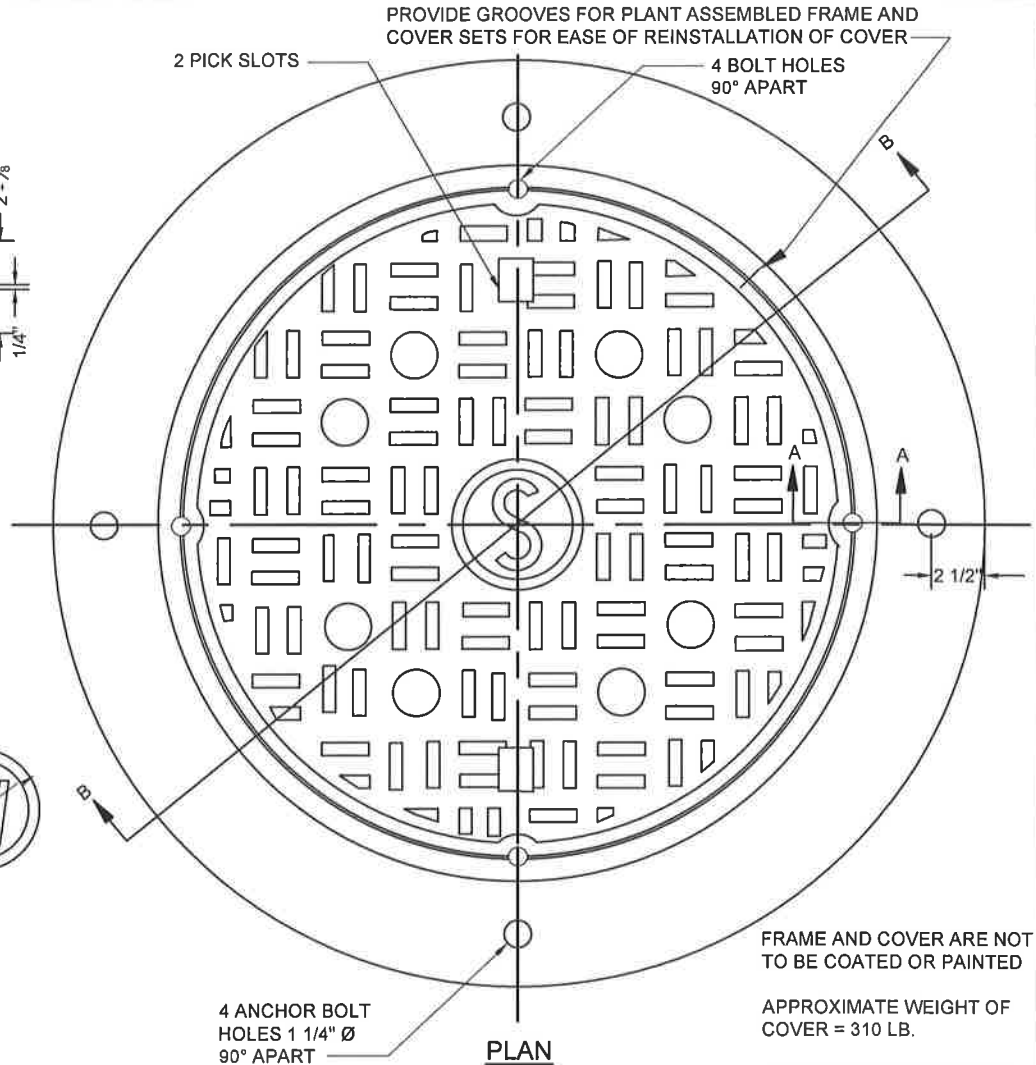
PICKHOLE DETAIL



INSIGNIA DETAILS



**STAINLESS STEEL
 LOCK BOLT
 AISI TYPE 304
 STAINLESS STEEL**

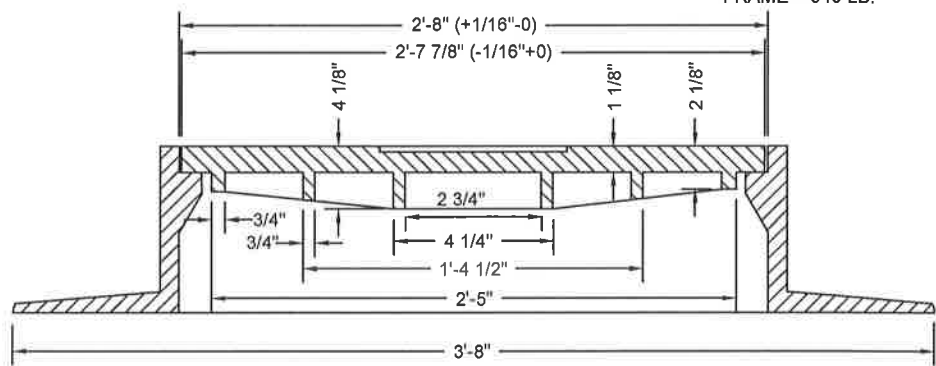


PLAN

FRAME AND COVER ARE NOT
 TO BE COATED OR PAINTED

APPROXIMATE WEIGHT OF
 COVER = 310 LB.

APPROXIMATE WEIGHT OF
 FRAME = 340 LB.



SECTION B-B

MATERIAL SPECIFICATION:
 GRAY IRON ASTM A48 CL35B
 CASTINGS SHALL CONFORM TO AND BE MANUFACTURED
 IN ACCORDANCE WITH THE REQUIREMENTS OF AASHTO
 STD M306, LATEST REVISION

REFERENCE WSSC DWG NO. 721471Y, LATEST REVISION 1-29-81

**SEE DETAIL P&M 10.1a
 FOR CONTINUATION**

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3/17/16
[Signature]
 MATERIAL AND SERVICES GROUP LEADER

PROCUREMENT AND MANUFACTURING DETAIL

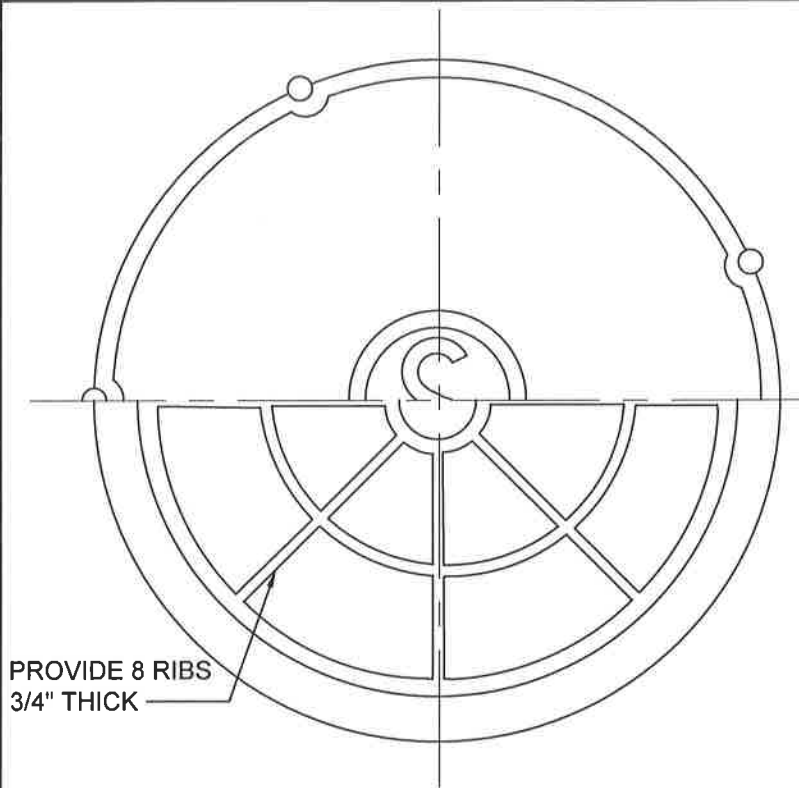
**LOCKING TYPE-WATERTIGHT
 30\"/>**

**P&M
 10.1b**

(REVISED 3/2016) P&M10.1b

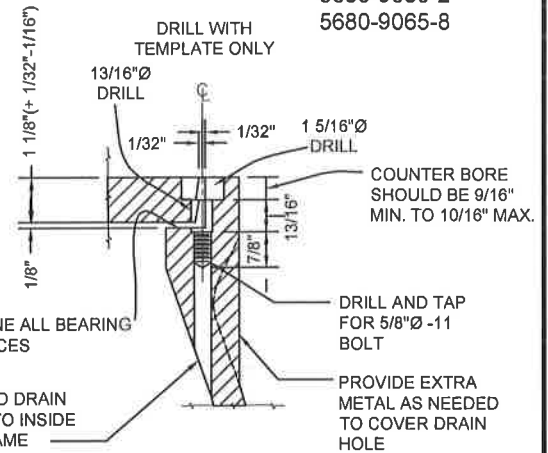
APPLICABLE STOCK NOS.

5680-9027-8
5680-9052-6
5680-9030-2
5680-9065-8

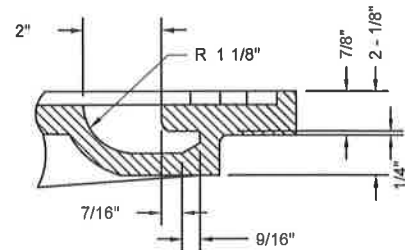


PROVIDE 8 RIBS
3/4" THICK

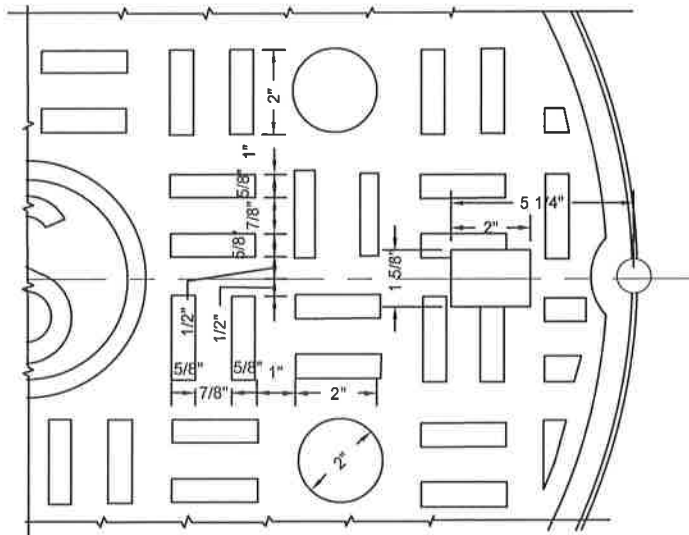
BOTTOM VIEW



SECTION A-A



**SECTION THROUGH
PICK SLOT**

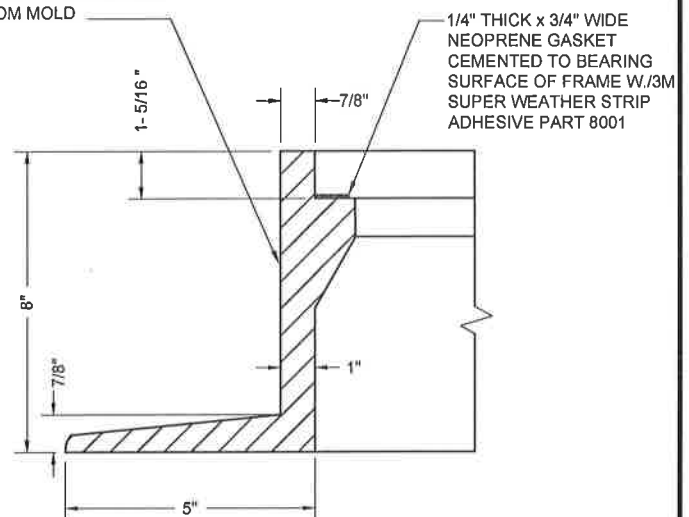


SEE DETAIL P&M 10.2b
FOR CONTINUATION

MATERIAL SPECIFICATION:
GRAY IRON ASTM A48 CL35B

CASTINGS SHALL CONFORM TO AND BE MANUFACTURED
IN ACCORDANCE WITH THE REQUIREMENTS OF AASHTO
STD M306, LATEST REVISION

PROVIDE APPROPRIATE
DRAFT TO ENABLE
REMOVAL OF PATTERN
FROM MOLD



SECTION OF RING

REFERENCE WSSC DWG NO. 721472Y, LATEST REVISION 1-29-81

PROCUREMENT AND MANUFACTURING DETAIL

WASHINGTON
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REVISIONS:

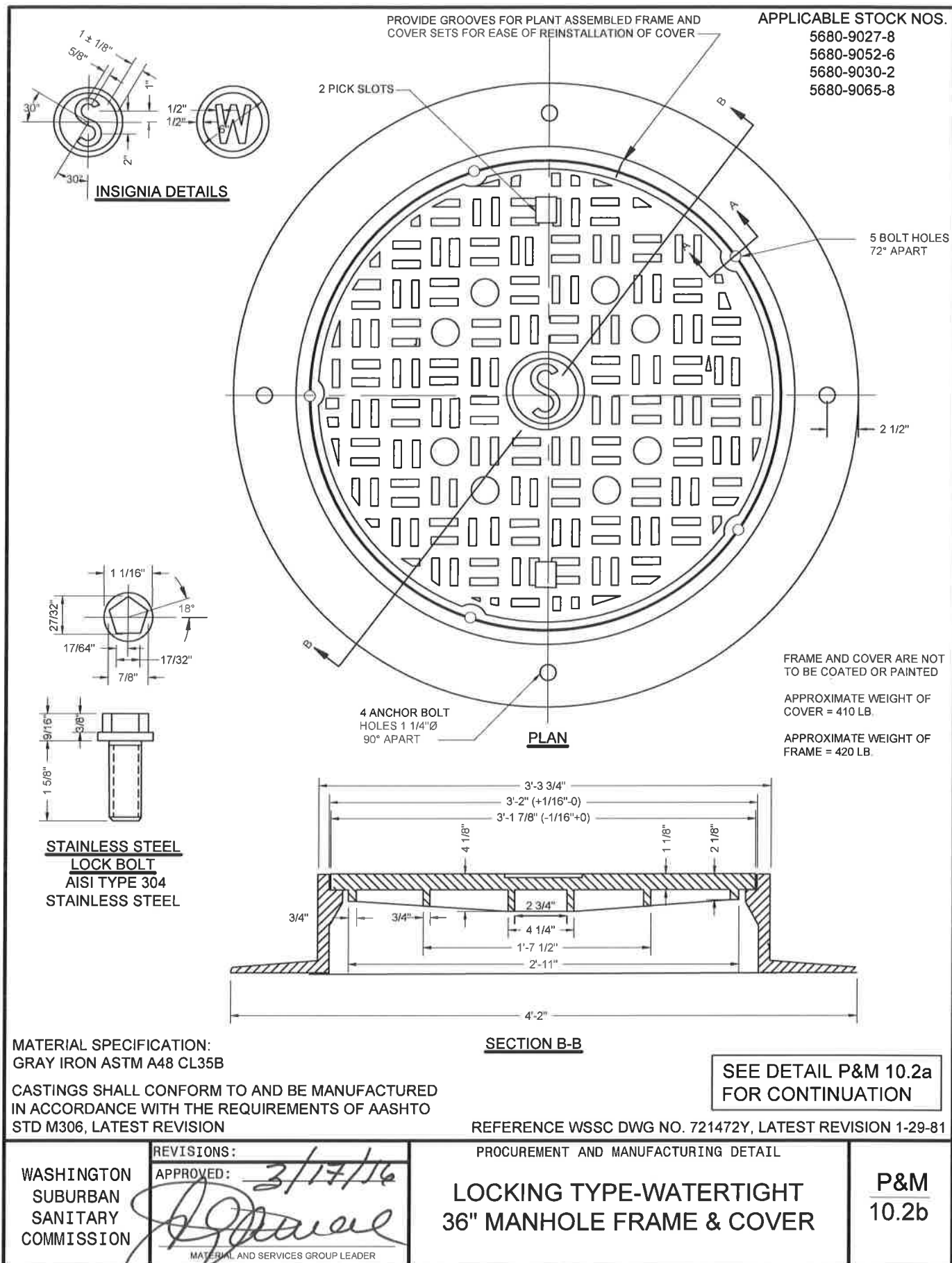
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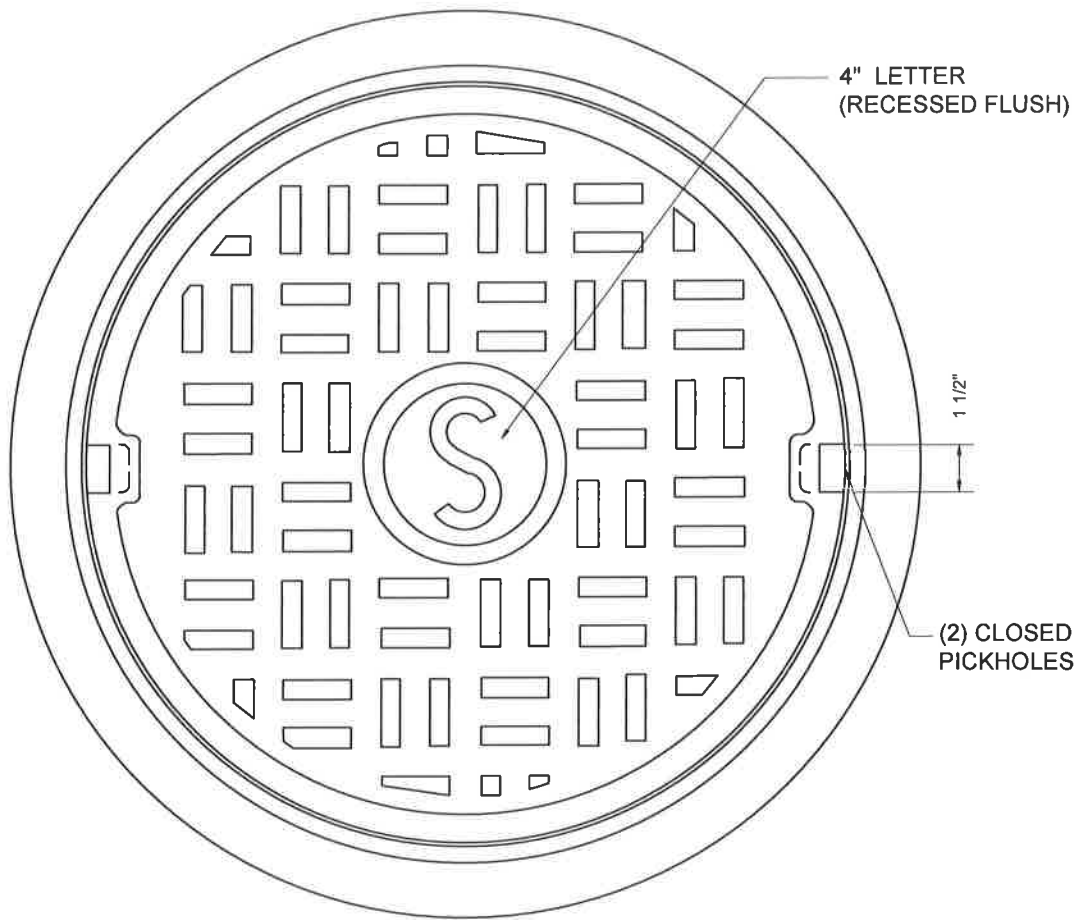
MATERIAL AND SERVICES GROUP LEADER

**LOCKING TYPE-WATERTIGHT
36" MANHOLE FRAME & COVER**

**P&M
10.2a**

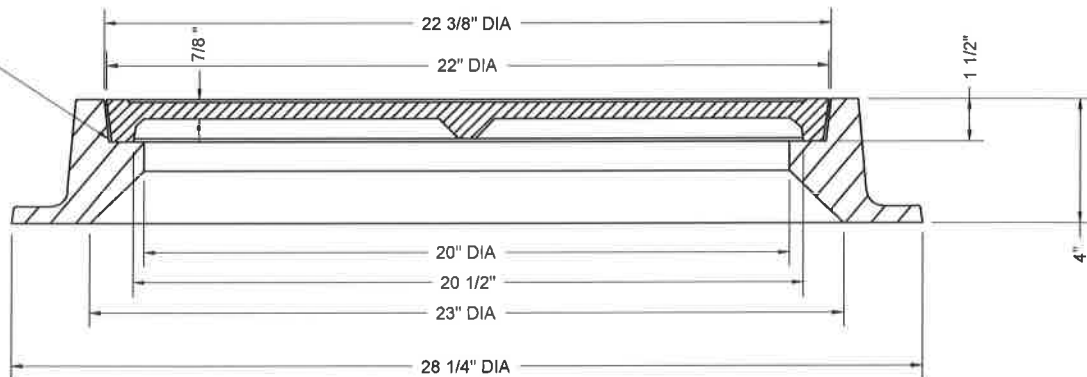
(REVISED 3/2016) P&M10.2a





PLAN

MACHINE
BEARING
SURFACES



FRAME AND COVER SECTION

MATERIAL SPECIFICATION:
GRAY IRON ASTM A48 CL35B

FRAME SHALL CONFORM TO AND BE
MANUFACTURED IN ACCORDANCE WITH
THE REQUIREMENTS OF AASHTO STD
M306, LATEST REVISION

SEE DETAIL P&M 10.4a1
FOR CONTINUATION

APPLICABLE STOCK NOS.

5680-9011-2

5680-9012-0

5680-9021-1

*5680-9013-8

* TRAFFIC RATED WATER COVER
(SEE P&M/10.4B)

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3/17/16

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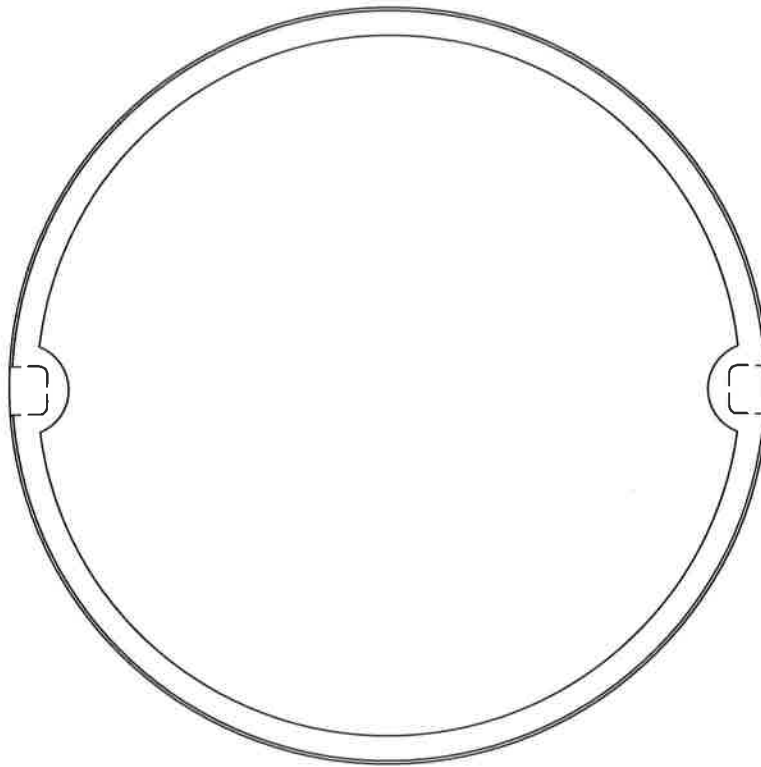
MATERIAL AND SERVICES GROUP LEADER

PROCUREMENT AND MANUFACTURING DETAIL

**LIGHTWEIGHT MANHOLE
FRAME & COVER**

**P&M
10.4a**

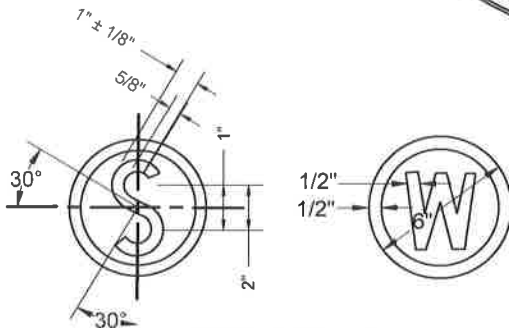
(REVISED 3/2016) P&M10.4a



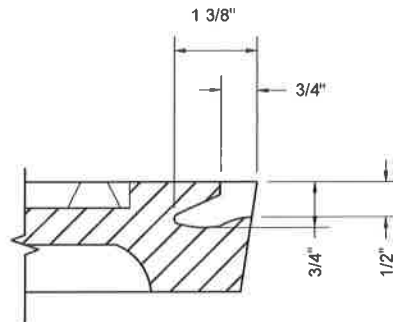
BOTTOM VIEW

APPROXIMATE WEIGHT OF
FRAME = 130 LBS

APPROXIMATE WEIGHT OF
NON-TRAFFIC COVER = 65 LBS



INSIGNIA DETAILS



PICKHOLE DETAIL

MATERIAL SPECIFICATION:
GRAY IRON ASTM A48 CL35B

FRAME SHALL CONFORM TO AND BE
MANUFACTURED IN ACCORDANCE WITH
THE REQUIREMENTS OF AASHTO STD
M306, LATEST REVISION

SEE DETAIL P&M 10.4a
FOR CONTINUATION

APPLICABLE STOCK NOS.

5680-9011-2

5680-9012-0

5680-9021-1

*5680-9013-8

* TRAFFIC RATED WATER COVER
(SEE P&M/10.4B)

WASHINGTON
SUBURBAN
SANITARY
COMMISSION

REVISIONS:

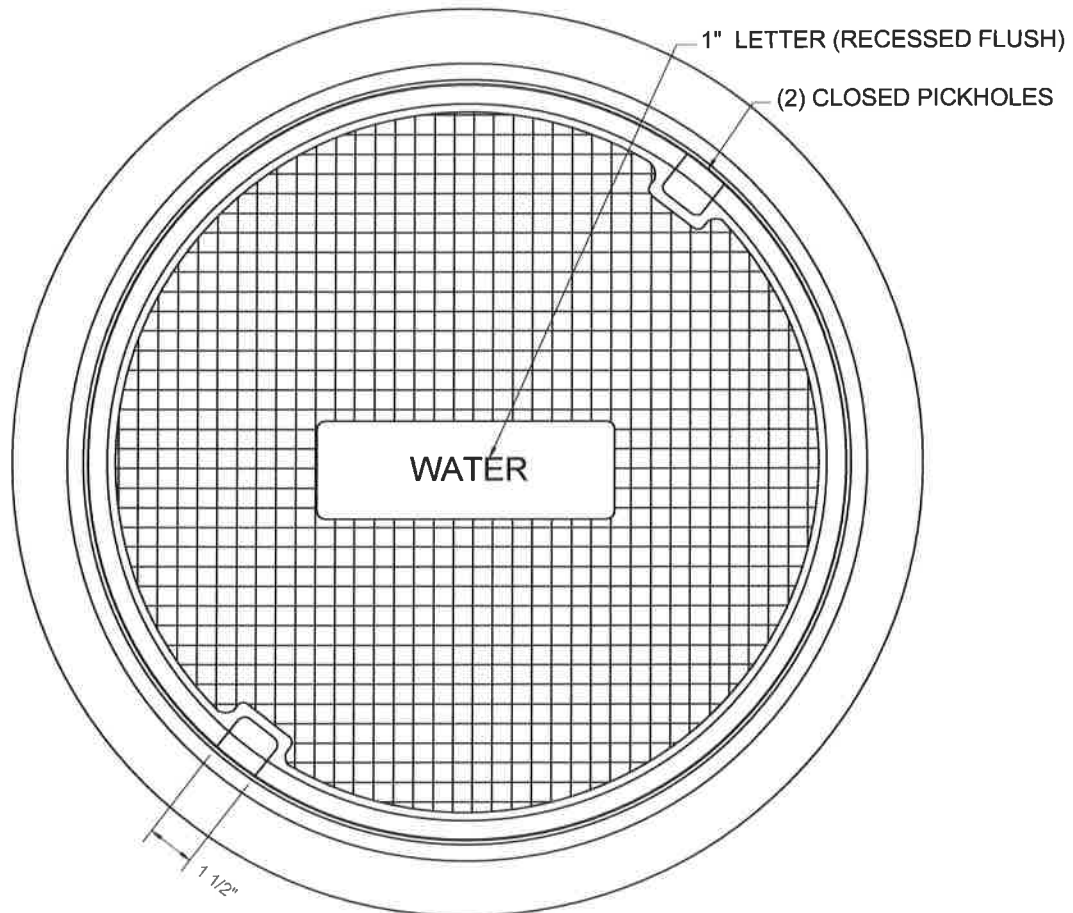
APPROVED: *3/17/16*

MATERIAL AND SERVICES GROUP LEADER

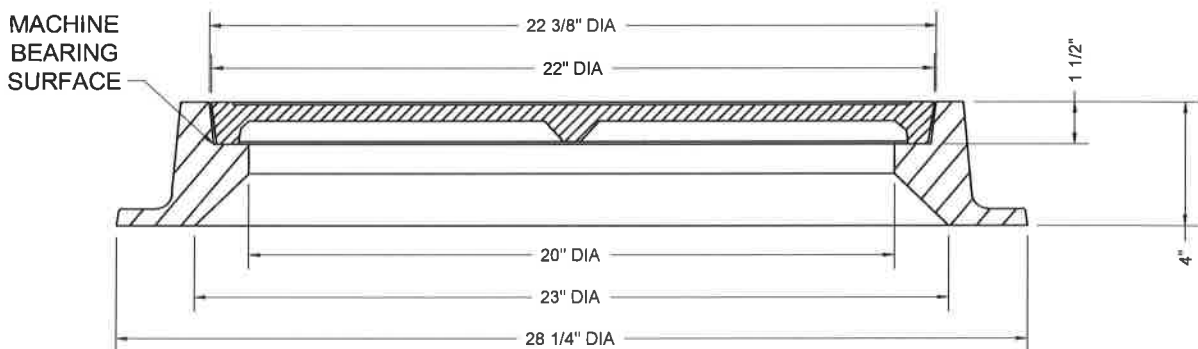
PROCUREMENT AND MANUFACTURING DETAIL

LIGHTWEIGHT MANHOLE
FRAME & COVER

P&M
10.4a1



PLAN



FRAME AND COVER SECTION

MATERIAL SPECIFICATION:
GRAY IRON ASTM A48 CL35B

CASTINGS SHALL CONFORM TO
AND BE MANUFACTURED IN
ACCORDANCE WITH THE
REQUIREMENTS OF AASHTO
STD M306, LATEST REVISION

SEE DETAIL P&M 10.4b1
FOR CONTINUATION

APPLICABLE STOCK NOS.
5680-9011-2) SEE P&M
5680-9012-0) 10.4A
5680-9021-1
5680-9013-8

WASHINGTON
SUBURBAN
SANITARY
COMMISSION

REVISIONS:

APPROVED: *3/17/16*

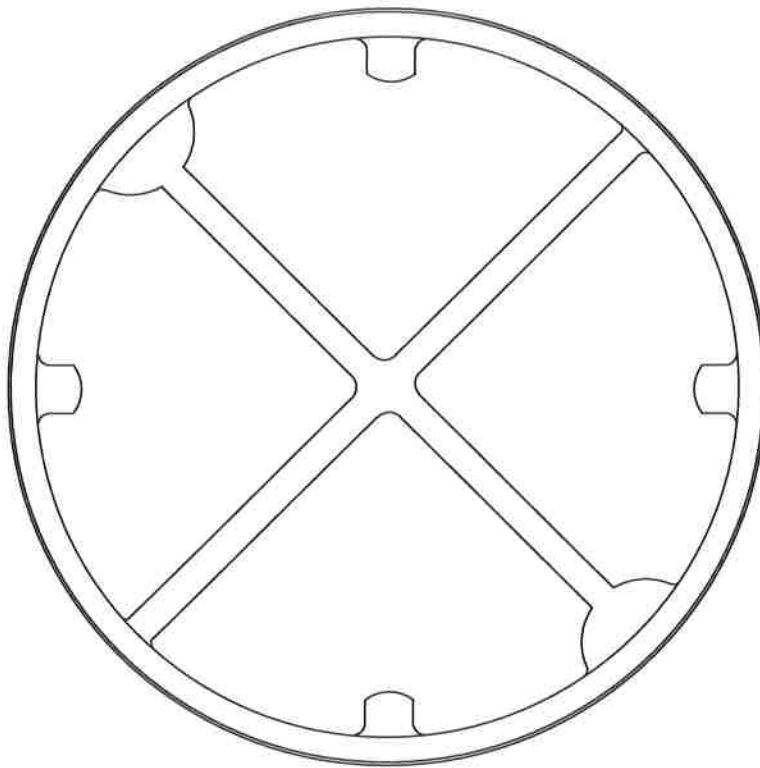
MATERIAL AND SERVICES GROUP LEADER

PROCUREMENT AND MANUFACTURING DETAIL

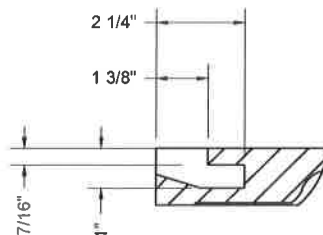
HEAVYWEIGHT MANHOLE
FRAME & COVER

P&M
10.4b

(REVISED 3/2016) P&M10.4b



BOTTOM VIEW
OF COVER



PICKHOLE
DETAIL

APPROXIMATE WEIGHT OF
FRAME = 130 LBS

APPROXIMATE WEIGHT OF
HEAVY DUTY COVER = 75 LBS

CASTINGS SHALL CONFORM TO
AND BE MANUFACTURED IN
ACCORDANCE WITH THE
REQUIREMENTS OF AASHTO
STD M306, LATEST REVISION

MATERIAL SPECIFICATION:
GRAY IRON ASTM A48 CL35B

APPLICABLE STOCK NOS.
5680-9011-2) SEE P&M
5680-9012-0) 10.4A
5680-9021-1
5680-9013-8

SEE DETAIL P&M 10.4b
FOR CONTINUATION

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REVISIONS:

APPROVED: *3/17/16*
[Signature]

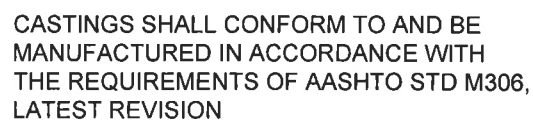
MATERIAL AND SERVICES GROUP LEADER

PROCUREMENT AND MANUFACTURING DETAIL

HEAVYWEIGHT MANHOLE
FRAME & COVER

P&M
10.4b1

5680-9020-3



PLAN

FRAME SECTION A-A

MATERIAL AND SERVICES GROUP LEADER

P&M
10.5a

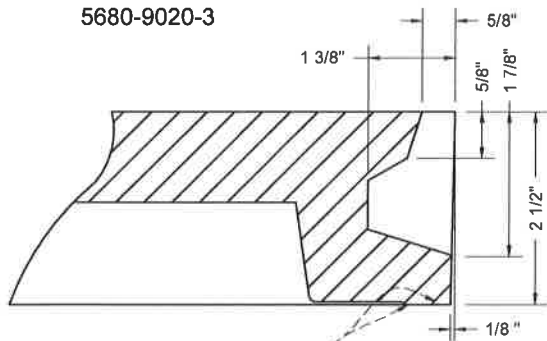
(REVISED 3/2016) P&M10.5a

APPLICABLE STOCK NOS.

5680-9009-6

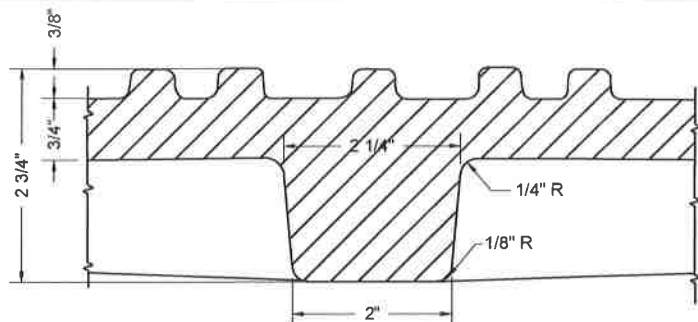
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5680-9020-3

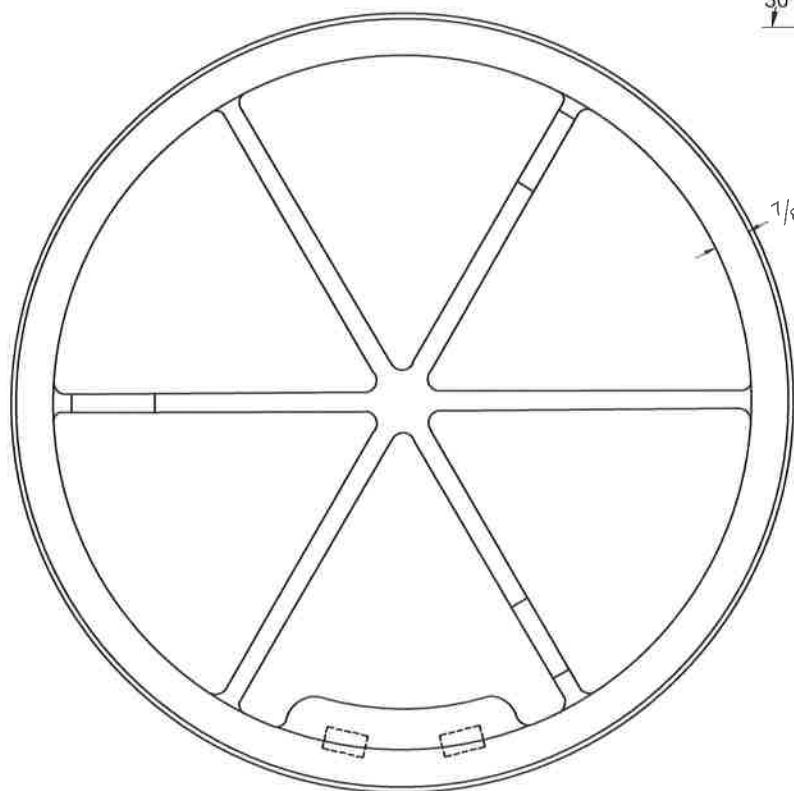


MACHINE ALL BEARING SURFACES

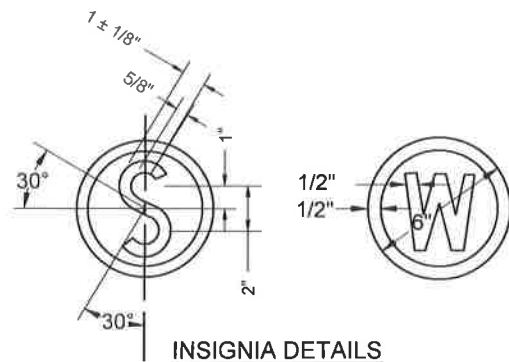
SECTION B-B



SECTION C-C



BOTTOM VIEW
OF COVER



SEE DETAIL P&M 10.5a
FOR CONTINUATION

MATERIAL SPECIFICATION:
GRAY IRON ASTM A48 CL35B

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THE REQUIREMENTS OF AASHTO STD M306,
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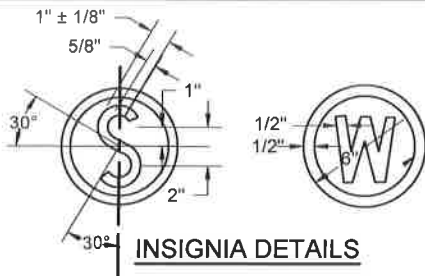
MATERIAL AND SERVICES GROUP LEADER

PROCUREMENT AND MANUFACTURING DETAIL

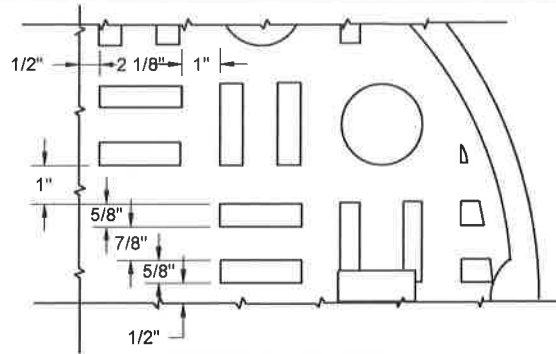
STANDARD 22" NON-WATERTIGHT
MANHOLE FRAME & COVER

P&M
10.5b

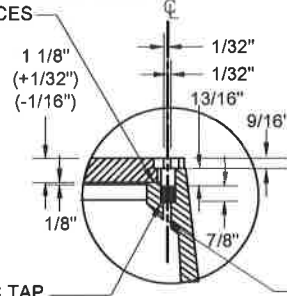
(REVISED 3/2016) P&M10.5b



INSIGNIA DETAILS



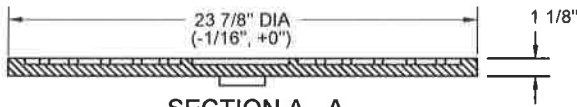
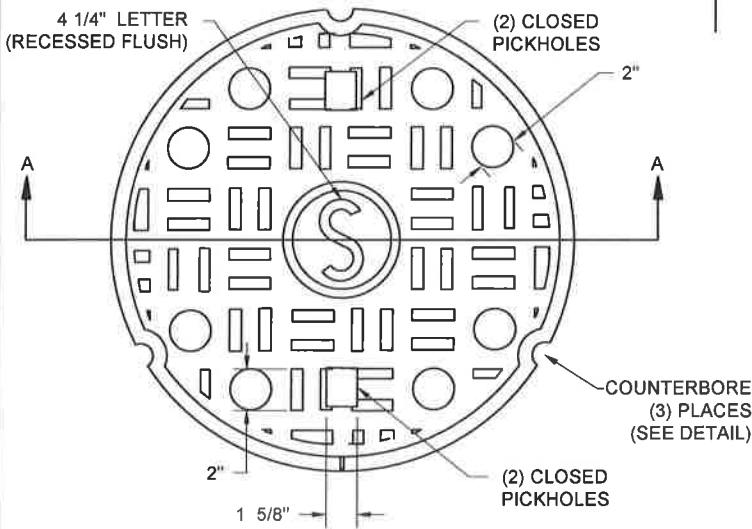
MACHINE ALL BEARING SURFACES



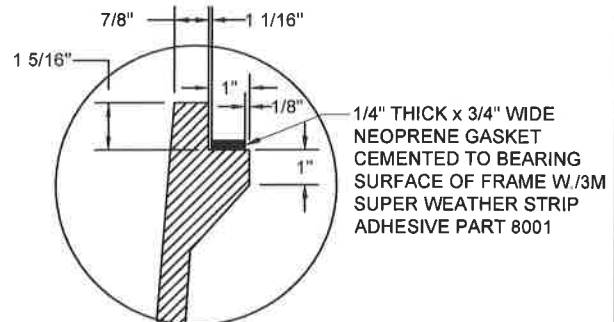
5/8" UNC TAP

NOTE: DRILL THRU FOR DRAIN, DRILL AND TAP FOR 5/8" Ø - 11 BOLT

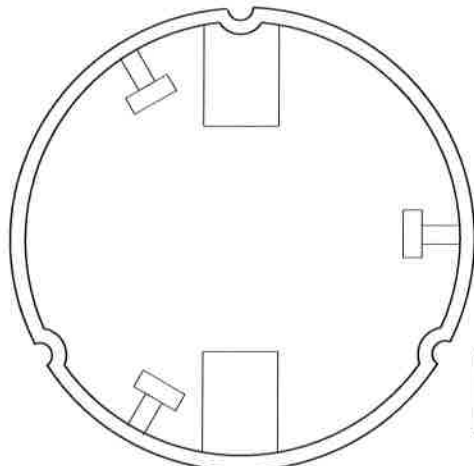
CROSS SECTION OF BOLT DOWN HOLE



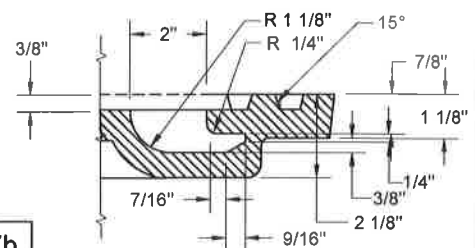
SECTION A - A



GASKET DETAIL



BOTTOM VIEW



PICKHOLE DETAIL

MATERIAL SPECIFICATION:
GRAY IRON ASTM A48 CL35B

APPLICABLE STOCK NOS.
5680-9025-2
5680-9028-6
5680-9050-0

CASTINGS SHALL CONFORM TO AND BE MANUFACTURED IN ACCORDANCE WITH THE REQUIREMENTS OF AASHTO STD M306, LATEST REVISION

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3/17/16
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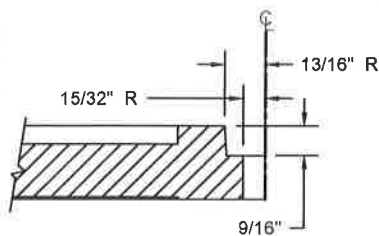
PROCUREMENT AND MANUFACTURING DETAIL

ALTERNATE LOCKING TYPE-
WATERTIGHT 22" MANHOLE
FRAME & COVER

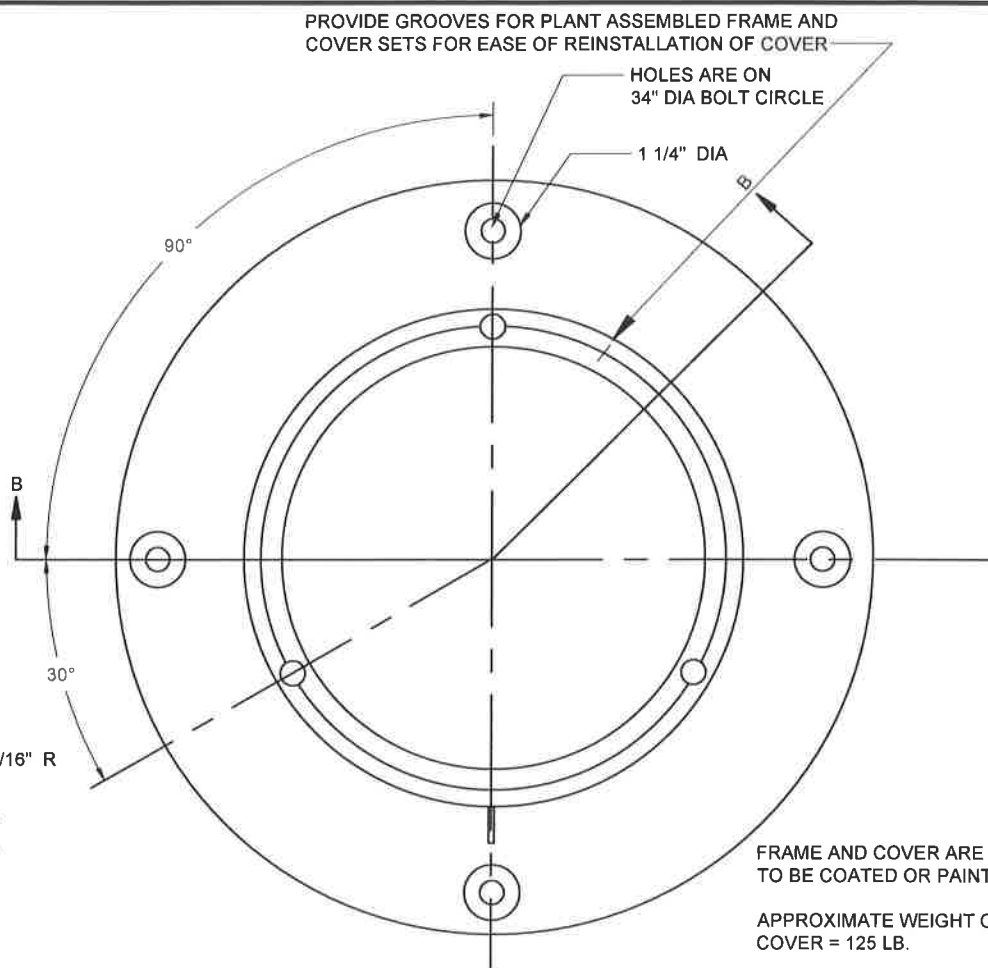
P&M
10.7a

(REVISED 3/2016) P&M10.7a

STAINLESS BOLT DETAILS



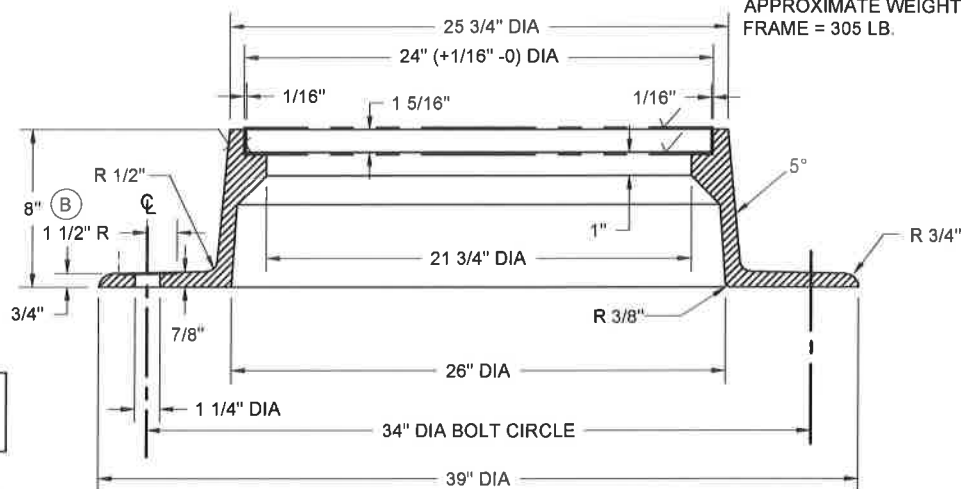
COUNTERBORE DETAIL



FRAME AND COVER ARE NOT
TO BE COATED OR PAINTED

APPROXIMATE WEIGHT OF
COVER = 125 LB.

APPROXIMATE WEIGHT OF
FRAME = 305 LB.



SECTION B - B

SEE DETAIL P&M 10.7a
FOR CONTINUATION

MATERIAL SPECIFICATION:
GRAY IRON ASTM A48 CL35B

CASTINGS SHALL CONFORM TO AND BE MANUFACTURED
IN ACCORDANCE WITH THE REQUIREMENTS OF AASHTO
STD M306, LATEST REVISION

APPLICABLE STOCK NOS.

5680-9025-2

5680-9028-6

5680-9050-0

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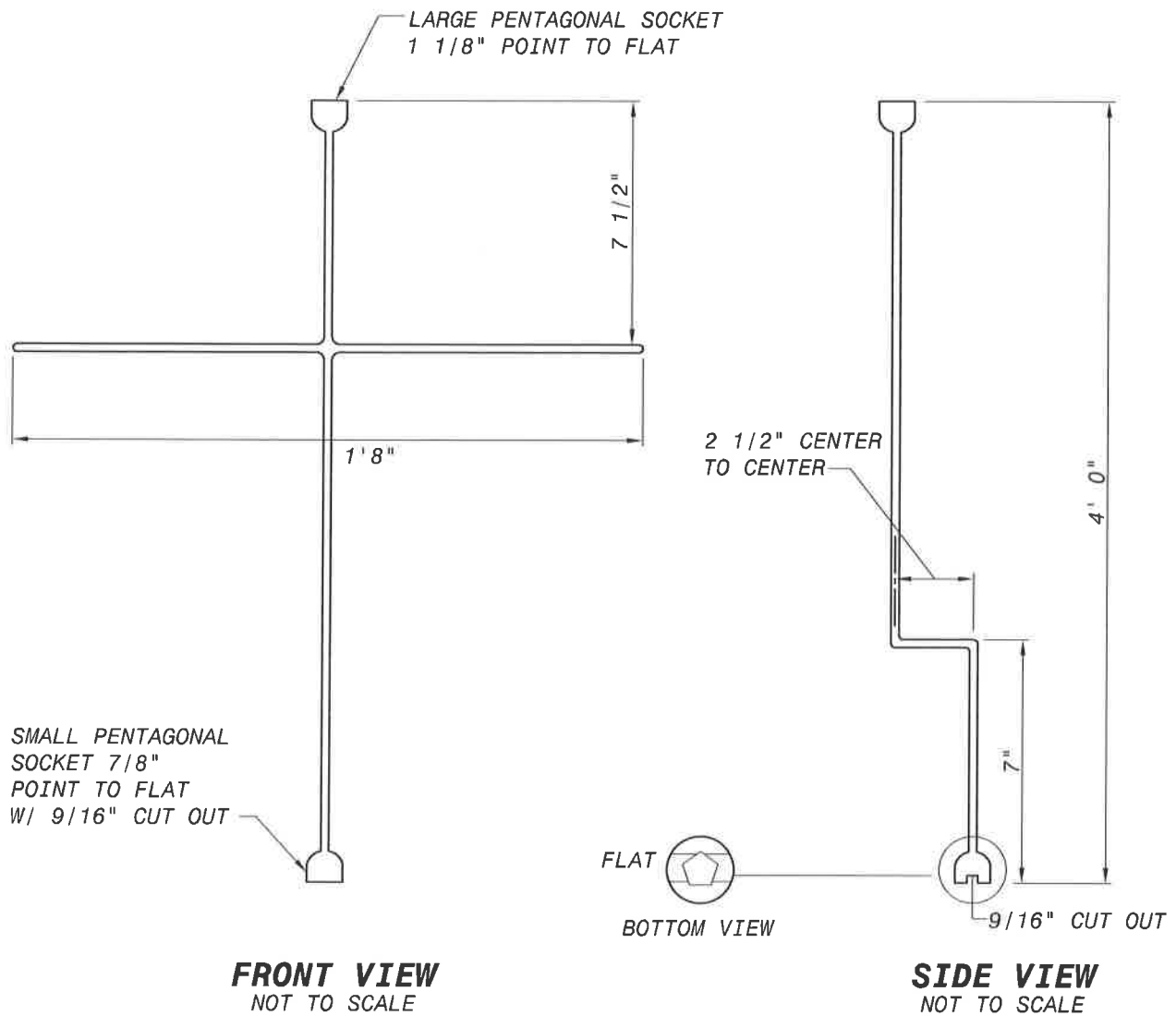
MATERIAL AND SERVICES GROUP LEADER

PROCUREMENT AND MANUFACTURING DETAIL

ALTERNATE LOCKING TYPE- WATERTIGHT 22" MANHOLE FRAME & COVER

P&M
10.7b

(REVISED 3/2016) P&M10.7b



NOTE: TOOL MADE FROM 5/8" COLD ROLLED STEEL SOCKET
MADE FROM STEEL AND PAINTED W/BLACK ENAMEL PAINT

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APPROVED:

MATERIALS AND SERVICES GROUP LEADER

PROCUREMENT AND MANUFACTURING DETAIL

STAND-UP METER KEY

(FOR REMOVING PENTAGONAL BOLTS FROM METER
COVERS AND OPERATING ANGLE VALVES)

P&M
11.1