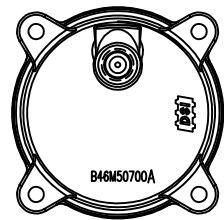
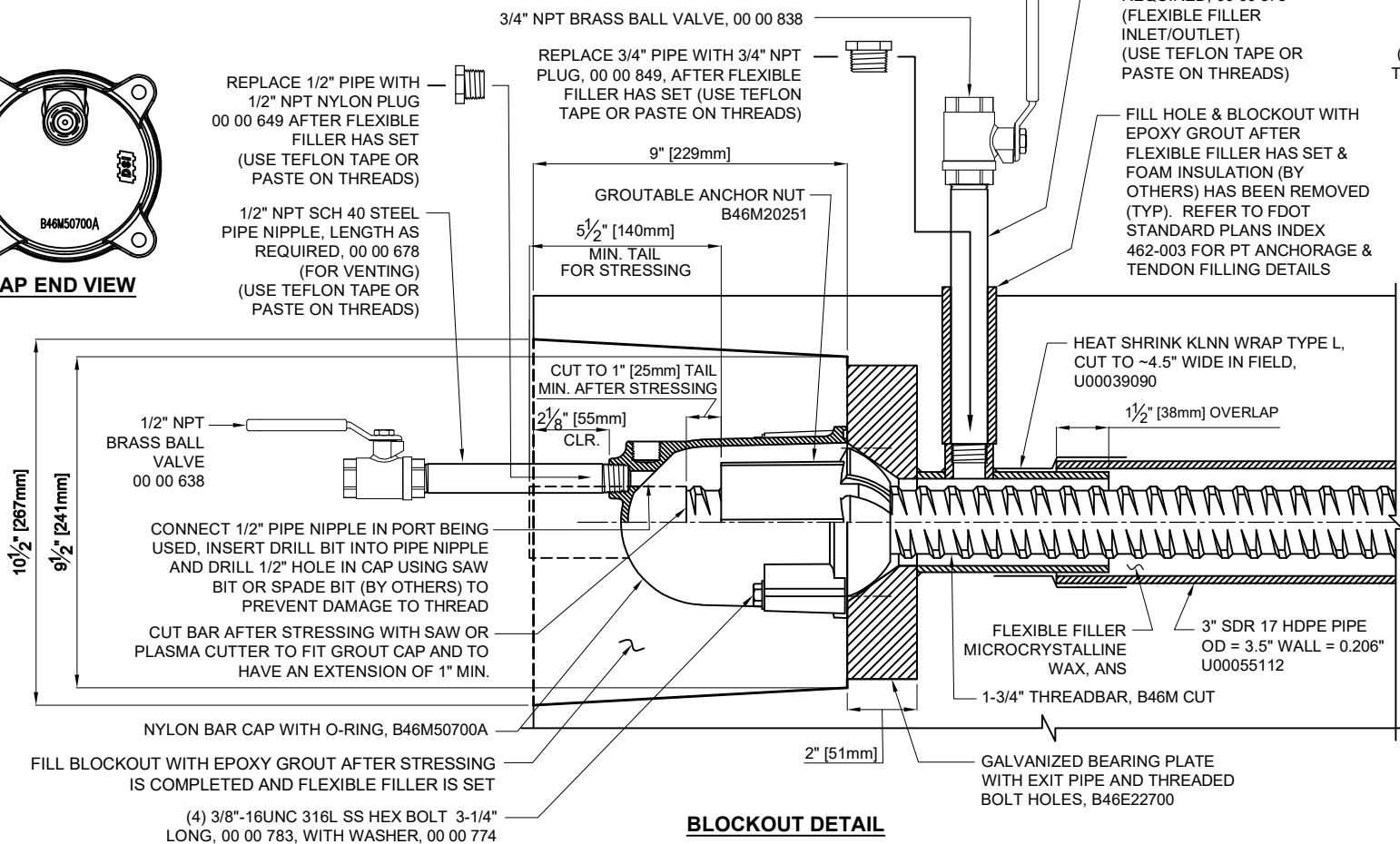


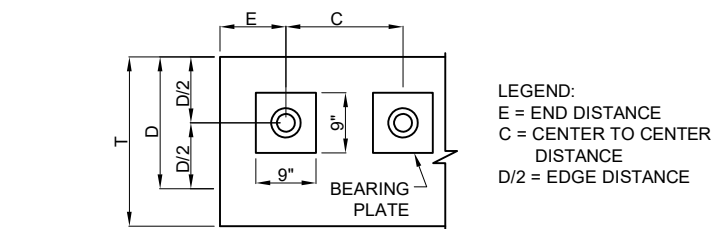
HDPE PIPE COUPLING



CAP END VIEW



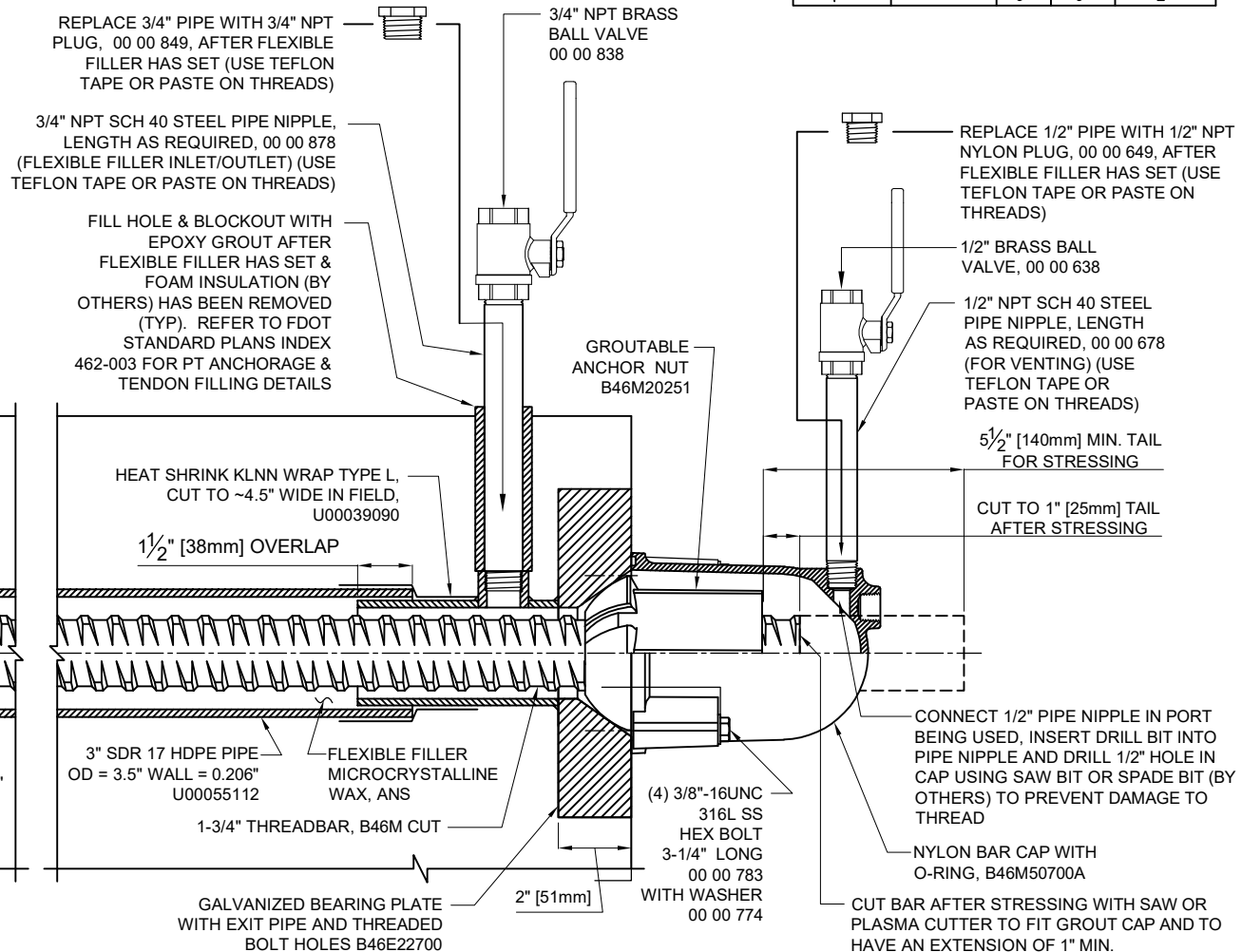
BLOCKOUT DETAIL



LEGEND:
E = END DISTANCE
C = CENTER TO CENTER DISTANCE
D/2 = EDGE DISTANCE

Plate Type	Concrete strength fci, ksi	Depth, D (in)	Minimum distances, in	
			End dist, E	c/c dist, C
Square	6.5	13.0	6.5	10.0
	6.0	14.0	7.0	11.0
	5.5	15.0	7.5	12.0
	5.0	16.0	8.0	13.0
	4.5	18.0	9.0	15.0
4.0	20.0	10.0	17.0	

Plate Type	Part No.	Width	Length	Thickness t
Square	B46E22700	9"	9"	2"



SURFACE MOUNT DETAIL

WARNING: READ AND COMPLY WITH ALL APPLICABLE SAFETY AND OPERATING INSTRUCTIONS AND WARNINGS FOR THREADBAR STRESSING BEFORE STARTING ANY WORK OR OPERATION.

CAUTION: WHEN PRESSURIZING GROUT CAPS, DO NOT STAND BEHIND CAPS!

CAUTION WHEN USING HIGH STRENGTH DYWIDAG THREADBAR® (GRADE 150) DO NOT WELD TO BAR. DO NOT USE BAR AS GROUND CONNECTION FOR WELDING. DO NOT ALLOW HOT SLAG OR SPARKS TO TOUCH BAR. DO NOT DAMAGE BAR SURFACE. DO NOT USE BARS WITH KINKS OR SHARP BENDS. FAILURE TO HEED THIS WARNING COULD CAUSE BAR TO BREAK RESULTING IN INJURY OR DAMAGE

- NOTES:
1. USERS SHALL REFER TO FDOT STANDARD SPECIFICATIONS AND PROJECT SPECIFIC CRITERIA FOR TENDON INSTALLATION, STRESSING, & FLEXIBLE FILLER.
 2. REQUIRED REINFORCING BARS ARE NOT SHOWN ON THIS DRAWING.
 3. MAXIMUM ANGULAR MISALIGNMENT WHEN USING ANCHOR NUT: ±2°.
 4. CENTER TO CENTER, END AND EDGE DISTANCE DEPENDS ON THE LOCATION OF THE BAR AND CONCRETE STRENGTH, (SEE TABLE).
 5. C/C DISTANCE = 2 X END DISTANCE - 2 X CONCRETE COVER (2" ASSUMED). TIGHTER C/C DISTANCE SHOULD BE EVALUATED.
 6. BURSTING REINFORCEMENT IS NOT SHOWN AND WILL BE INCLUDED WITH THE SHOP DRAWINGS.
 7. THREADBAR TENDONS ARE STRESSED FROM ONE END ONLY.

MATERIAL LIST		
PART NO.	DESCRIPTION	MATERIAL SPECIFICATION
B46M CUT	1-3/4" THREADBAR	ASTM A722 TYPE II STEEL
B46E22700	9"x9"x2" SQUARE PLATE WITH 2-7/8" OD x 3/16" WALL STEEL EXIT PIPE 5-1/2" LONG & BOLT HOLES, GALV.	STEEL PLATE, ASTM A36, PIPE, ASTM A512, A513 OR A519 GALVANIZED
B46M20251	1-3/4" GROUTABLE ANCHOR NUT	FORGING, NORMALIZED C1045
B46M50700A	NYLON BAR CAP WITH O-RING FOR FLEXIBLE FILLER	CAP: NYLON 6, 20% GLASS FIBER FILLED O-RING: HNBR
00 00 783 00 00 774	3/8"-16UNC HEX BOLT, 3-1/4" LONG NARROW WASHER	316L STAINLESS STEEL
U00055112	3" SDR 17 HDPE PIPE	HDPE
U00039090	HEAT SHRINK KLNN WRAP, TYPE L, 18" WIDE CUT TO ~4.5" WIDE IN FIELD	ACCORD. TO FDOT SPEC. P.T. SEC. 960-2.2.1.8

MATERIAL LIST		
PART NO.	DESCRIPTION	MATERIAL SPECIFICATION
00 00 878	3/4" NPT PIPE NIPPLE, LENGTH AS REQ'D (TEMP.)	SCH 40, BLACK WELDED STEEL
00 00 838	3/4" NPT VALVE (TEMPORARY)	BRASS
00 00 849	3/4" NPT PLUG	NYLON 6, WHITE
00 00 678	1/2" NPT PIPE NIPPLE, LENGTH AS REQ'D (TEMP.)	SCH 40, BLACK WELDED STEEL
00 00 638	1/2" NPT VALVE (TEMPORARY)	BRASS
00 00 649	1/2" NPT PLUG	NYLON 6, WHITE
ANS	FLEXIBLE FILLER MICROCRYSTALLINE WAX	ACCORD. TO FDOT SPECS. 938-5
ANS	TEFLON TAPE OR PASTE FOR THREADS	--
68 12 233	ELECTROFUSION COUPLER (OPTIONAL)	COMPOSITE

DIMENSIONS: INCH [mm] FOR REFERENCE ONLY

**INTERNAL FLEXIBLE FILLER
1-3/4" (46mm) THREADBAR ASSEMBLY DRAWING**

DATE: 06/29/20 DWG: I. Tira/G. Malecki CHK: SI APP: SI

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REV.	DATE	NAME

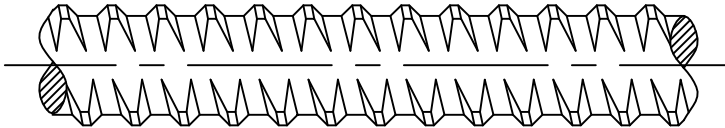
WEIGHT

SCALE 1:5

DRAWING NUMBER: PT 46M 100

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320 MARMON DRIVE - BOLINGBROOK, IL FAX: 630-739-1405

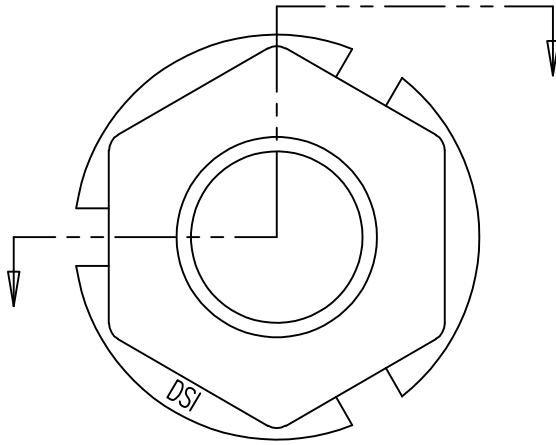
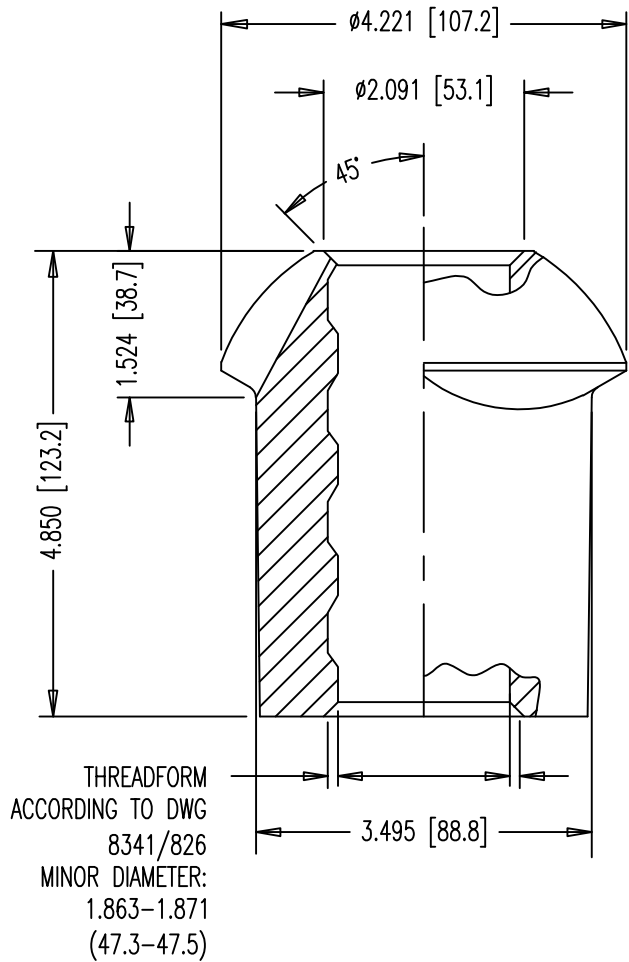
RIGHT HAND THREAD



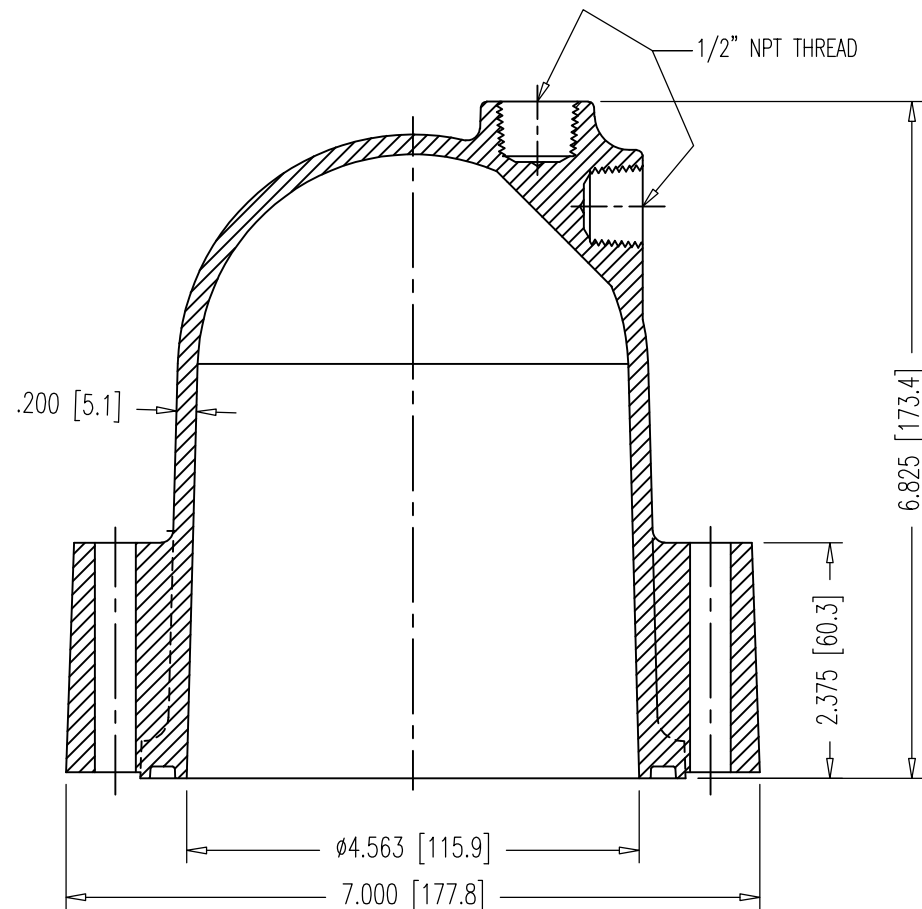
	<u>PART NUMBERS</u>	<u>SPECIFICATIONS</u>
FOR BARE BAR:	B46M CUT	ASTM A722 TYPE II

<u>PHYSICAL PROPERTIES</u>	
EFFECTIVE AREA:	2.58 SQ.IN. (1664 SQ.mm)
ULTIMATE STRENGTH:	150 KSI (1035 N/SQ.mm)
ULTIMATE LOAD:	387 KIPS (1721 KN)
YIELD LOAD:	310 KIPS (1378 KN)
WEIGHT:	9.37 LBS./FT. (13.9 Kg/m)
MAX. BAR ϕ INCL. RIBS:	2.075 IN. (52.7mm)
AVERAGE CORE ϕ :	1.830 IN. (46.5mm)
PITCH:	0.827 IN. (21.0mm)

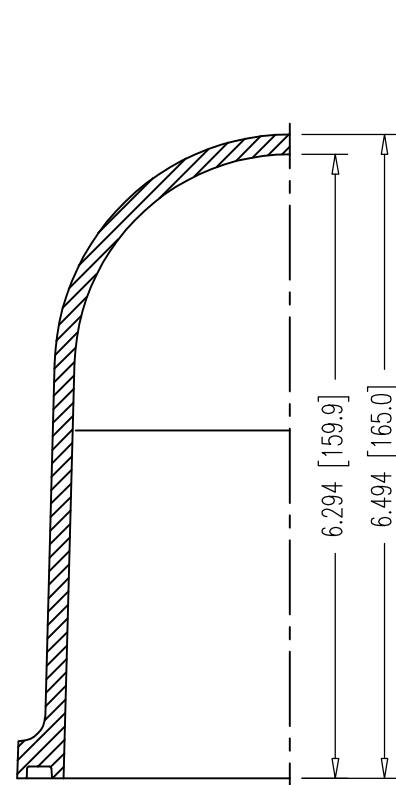
DIMENSIONS: INCH [mm] mm FOR REFERENCE ONLY		QUALITY PLAN NUMBER: QB0000010B		REV.	DATE	NAME	ECRN	PART NUMBER: B46M CUT
46mm THREADBAR GR150 HR				MATERIAL: SEE ABOVE	SCALE NTS			
DATE: 03-23-17	DWG: S.YANG	CHK: S.Y.	APP: S.E.					DRAWING NUMBER: B46M CUT
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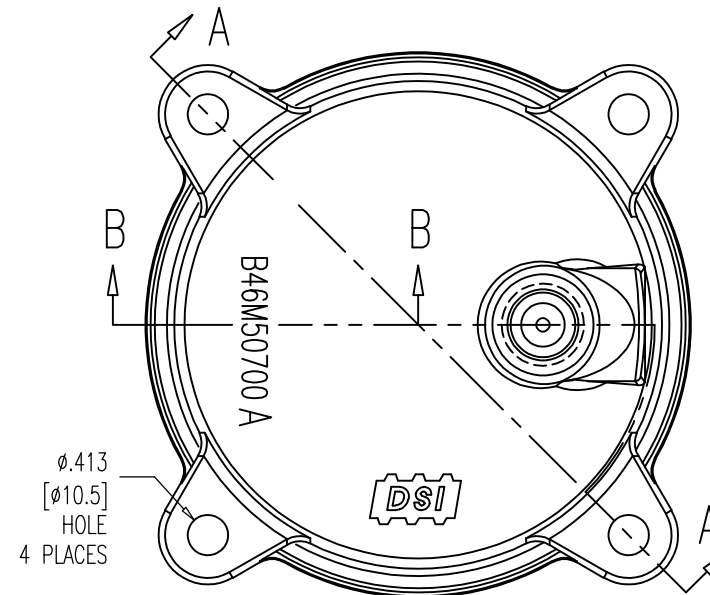
DIMENSIONS: INCH [mm] mm FOR REFERENCE ONLY		QUALITY PLAN NUMBER: QBE0020100F		TOLERANCES: ±.035 UNLESS NOTED	WEIGHT 9.9 LBS.	REV.	DATE	NAME	PART NUMBER: B46M20251
GROUTABLE ANCHOR NUT FOR 1-3/4" HR BAR, 150 KSI				MATERIAL: REF. ANCHOR NUT BLANK DRAWING B46M20191	SCALE 1:2				DRAWING NUMBER: B46M20200
				DATE: 04-30-18	DWG: S.YANG	CHK: S.Y.	APP: S.E.		
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DYWIDAG-SYSTEMS INTERNATIONAL, USA, INC. 320 MARMON DRIVE - BOLINGBROOK, IL 60440 PHONE: 630-739-1100 FAX: 630-739-1405									



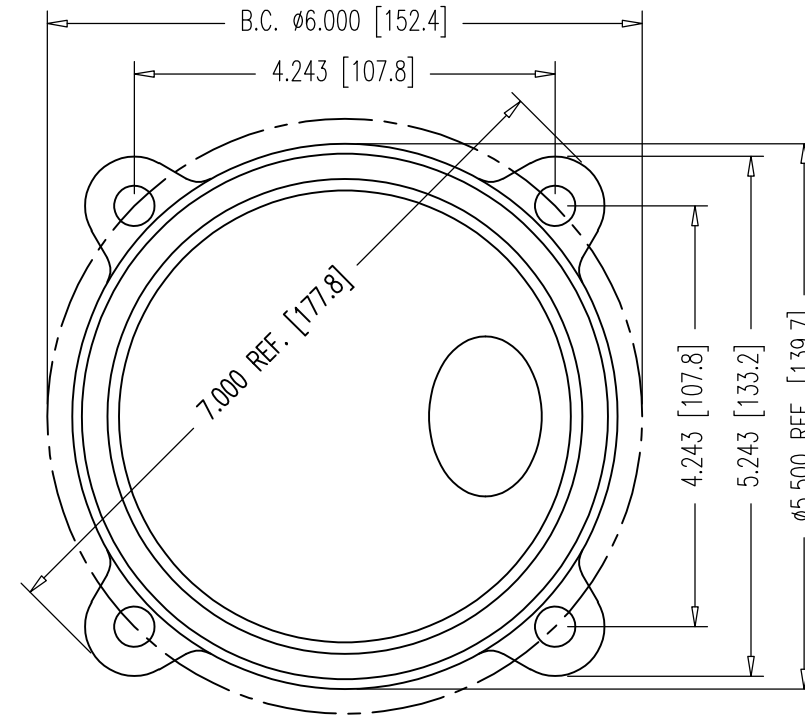
SECTION A-A



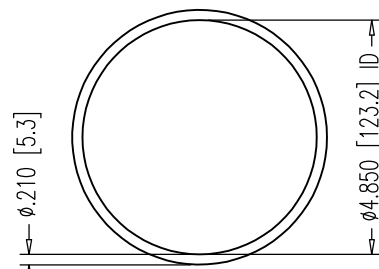
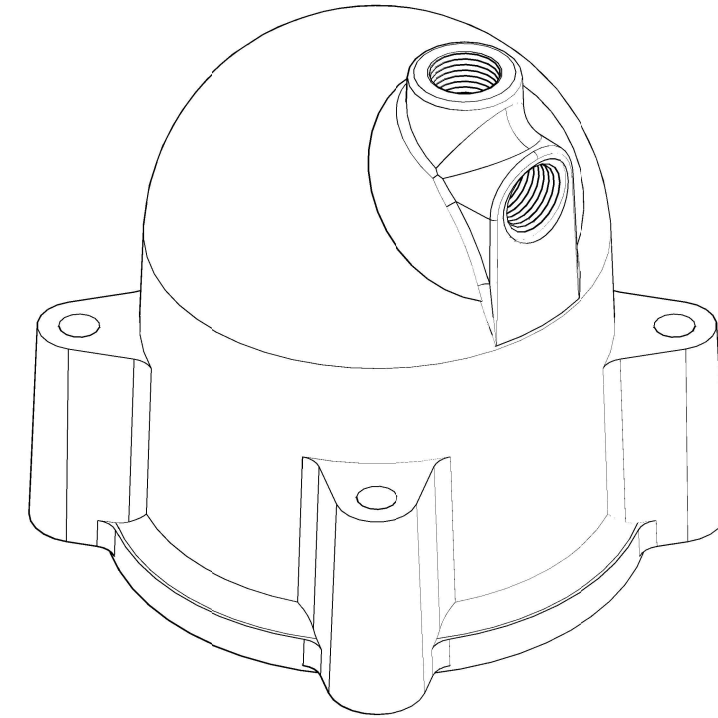
SECTION B-B



TOP VIEW



BOTTOM VIEW



O-RING MATERIAL:
HNBR MEETING FDOT
SPECIFICATIONS 960-2.2.1.7.

#352 O-RING
4-7/8" x 5-1/4" x 3/16"
SCALE: NTS

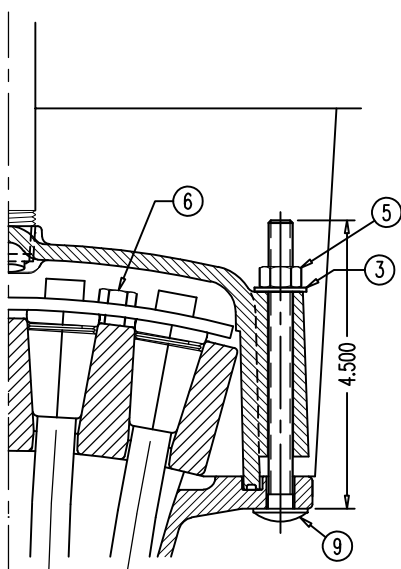
NOTES:

- USE 3/8"-16UNC 316L S.S. HEX BOLTS, 3" LONG 00 00 782 W/SMALL DIA. WASHER 00 00 774.
- INSTALL O-RING IN GROOVE USING DROPS OF LIQUID ADHESIVE BEFORE SHIPPING.
- THE NYLON CONFORMS TO ASTM D5989 WITH CELL CLASSIFICATION S-PA0401 (ULTIMATE STRENGTH 10,000 PSI MIN., WITH UV STABILIZER ADDED).
- DRILL 1/2" [12.7] HOLE IN PORT BEING USED-CAUTION-RECOMMEND USING HOLE SAW BIT OR SPADE BIT (BY OTHERS), BE CAREFULL TO PREVENT DAMAGE TO THREADS OR CAP.
- WHEN PRESSURIZING GROUT CAPS, DO NOT STAND BEHIND CAPS!

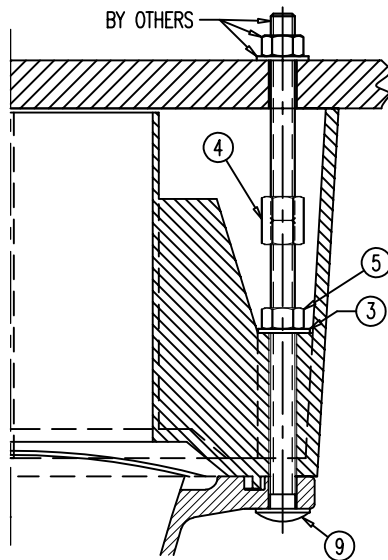
DIMENSIONS: INCH [mm] mm FOR REFERENCE ONLY		QUALITY PLAN NUMBER: QS60072300P		TOLERANCES: SEE TOLERANCE NOTE	WEIGHT ~1.4 LBS.	REV. DATE NAME 1 03/29/19 S.I.	PART NUMBER: B46M50700A
NYLON BAR CAP W/ O-RING FOR 1-3/8" HEX NUTS AND ALL 1-3/4" NUTS FOR FLEXIBLE FILLER				MATERIAL: NYLON 6 20% GLASS FIBER FILLED COLOR: BLACK	SCALE 1:2 UNLESS NOTED		DRAWING NUMBER: B46M50700A
DATE: 03-22-18	DWG: G. MALECKI	CHK: S.Y.	APP: S.E.	THIS DRAWING, THE PERTINENT ENCLOSURES, DESCRIPTIONS, CALCULATIONS ETC. AND THEIR CONTENTS ARE THE PROPERTY OF DYWIDAG SYSTEMS INTERNATIONAL, USA, INC. THEY ARE NOT ALLOWED TO BE DUPLICATED WITHOUT OUR PERMISSION. THEY ARE ALSO NOT TO BE SHOWN OR EXPLAINED FOR ANY REASON TO A THIRD PARTY OTHER THAN FOR REASONS EXPRESSLY INTENDED BY DSI'S SUBMITTAL TO THE ORIGINAL RECEIVER. THEY HAVE TO BE RETURNED UPON REQUEST.			

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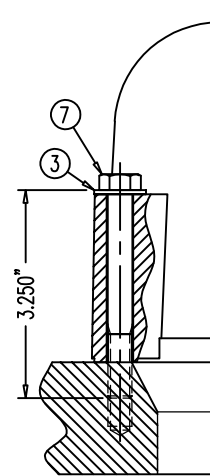




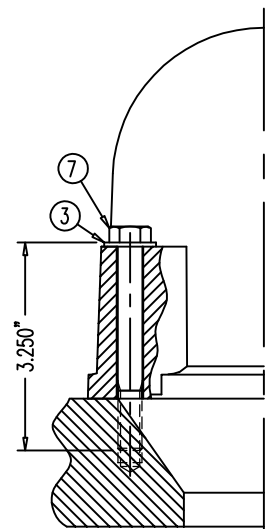
KEEPER PLATE 68 04 2637 ON
WEDGE PLATE 68 04 2534A &
NYLON CAP 68 04 2539 ON
FLAT ANCHOR 68 04 2548



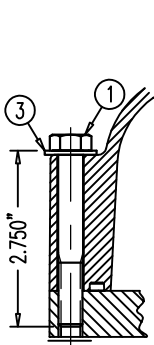
POCKET FORMER 68 04 2640
ON FLAT ANCHOR 68 04 2548



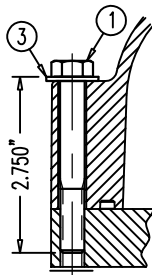
NYLON BAR CAP B36E50700 OR 50700A
ON GALV. BEARING PLATE
B26E22510, 22610, 22700, 22800,
B32E22510, 22610, 22700, 22800,
B36E22410, 22420, 22910, 22510,
22610, 22700, 22800 & NYLON
BAR CAP B66E50700 OR 50700A
ON GALV. BEARING PLATE B66E22700



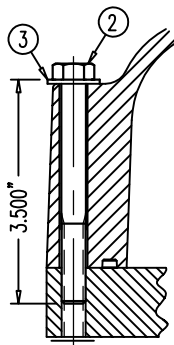
NYLON BAR CAP
B46M50700
OR 50700A
ON GALV.
BEARING PLATE
B46E22700 &
B46E22800



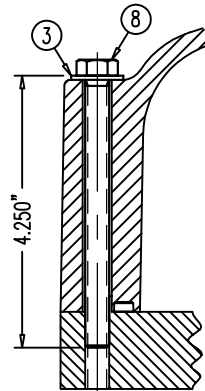
NYLON CAP
68 07 7230 OR 7230A
ON MPA 68 07 248



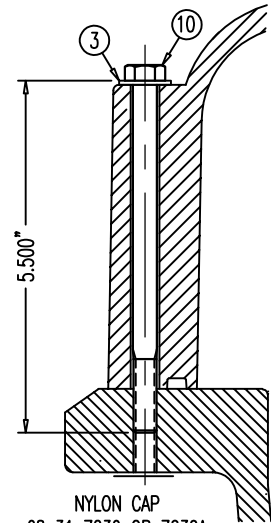
NYLON CAP
68 12 7230 OR 7230A
ON MPA 68 12 248



NYLON CAP
68 19 7230 OR 7230A
ON MPA 68 19 248



NYLON CAP
68 27 7230 OR 7230A
ON MPA 68 27 248



NYLON CAP
68 31 7230 OR 7230A
ON MPA 68 31 248

Ø.812



TYPE A NARROW WASHER
FOR 3/8"-UNC BOLT

NOTE:
THE 316L S.S. BOLTS ARE SPECIAL ORDER.
ALL WASHERS, HEX NUTS & COUPLERS HAVE
NO MARKINGS.

POS.	PART NUMBER	DISCRIPTION (ALL PARTS 316L STAINLESS STEEL UNLESS NOTED)
①	00 00 771	3/8"-16UNC HEX BOLT, 2-3/4" LONG (1" LONG THREAD)
②	00 00 772	3/8"-16UNC HEX BOLT, 3-1/2" LONG (1" LONG THREAD)
③	00 00 774	TYPE A NARROW WASHER FOR 3/8"-UNC BOLT
④	00 00 776	3/8"-16UNC COUPLER, ZINC COATED
⑤	00 00 777	3/8"-16UNC HEX NUT
⑥	00 00 778	5/16"-18UNC HEX BOLT, 7/8" LONG, ZINC PLATED
⑦	00 00 783	3/8"-16UNC HEX BOLT, 3-1/4" LONG (1" LONG THREAD)
⑧	00 00 784	3/8"-16UNC HEX BOLT, 4-1/4" LONG (FULL THREAD)
⑨	00 00 789	3/8"-16UNC CARRIAGE BOLT, 4-1/2" LONG
⑩	00 00 790	3/8"-16UNC CARRIAGE BOLT, 5-1/2" LONG

DIMENSIONS: INCH

QUALITY PLAN NUMBER:

STAINLESS STEEL 316L BOLTS AND WASHER FOR NYLON CAPS

DATE: 09-10-04 DWG: G. MALECKI CHK: E.A. APP: K.S.

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SCALE
1:3

REV.	DATE	NAME	NAME
1	05/01/19	S.I.	
2	05/28/20	S.I.	

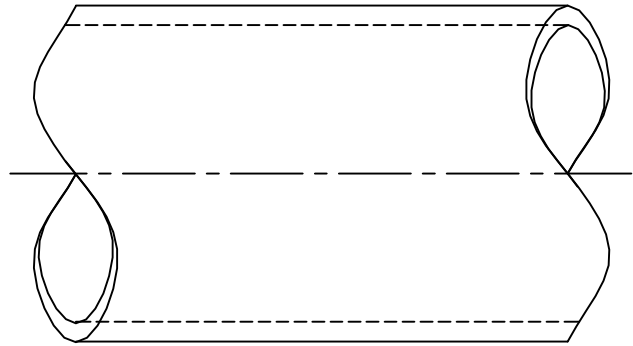
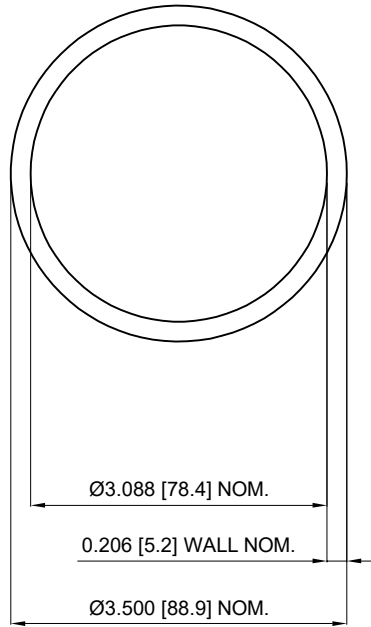
PART NUMBERS:
SEE TABLE

DRAWING NUMBER:
00 00 770

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DYWIDAG



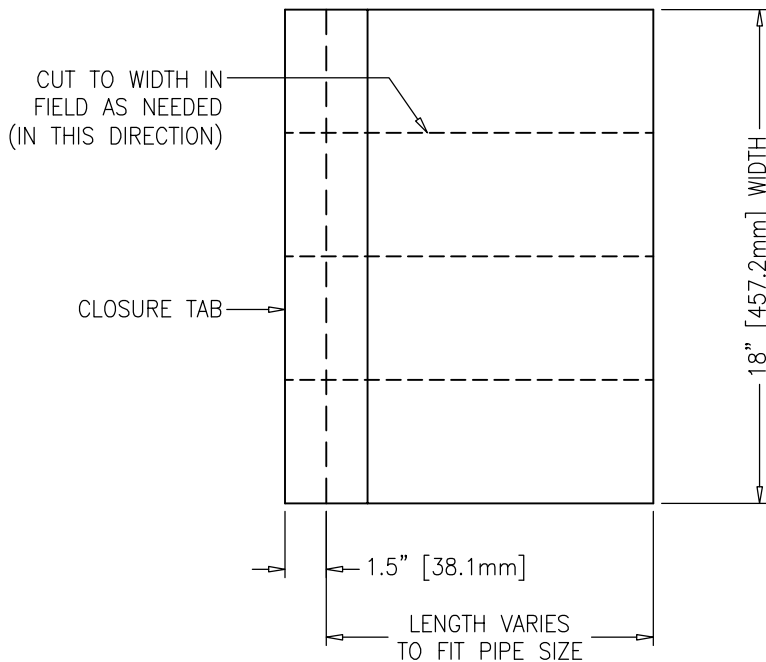
MATERIAL: 3" SDR 17 HDPE PIPE.

SPECIFICATIONS:

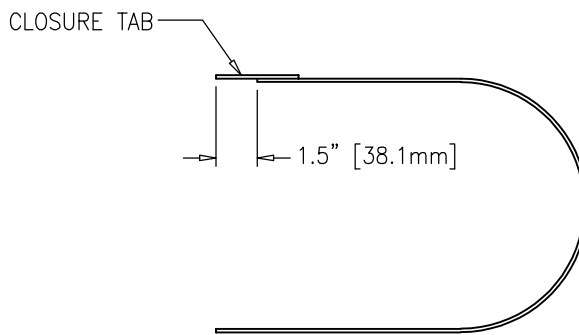
1. PIPE SHALL BE OF HIGH-DENSITY POLYETHYLENE AND SHALL HAVE A MAXIMUM DIMENSION RATIO (DR) OF 17 AS ESTABLISHED BY EITHER ASTM D3035 OR ASTM F714, AS APPROPRIATE FOR MANUFACTURING PROCESS USED..
2. PIPE SHALL HAVE A MINIMUM PRESSURE RATING OF 125 PSI.
3. MEETS REQUIREMENTS OF ASTM D3350 WITH A MINIMUM CELL CLASS OF 445574C.
4. CONTAINS ANTIOXIDANTS WITH A MINIMUM OXIDATIVE-INDUCTION TIME (OIT) ACCORDING TO ASTM D3895 OF 40 MINUTES.
5. REMOLDED FINISHED MATERIAL HAS A MINIMUM FAILURE TIME OF THREE HOURS WHEN TESTED FOR STRESS CRACK RESISTANCE USING ASTM F2136 AT AN APPLIED STRESS OF 348 PSI.
6. MINIMUM BEND RADIUS = 20 FT.

DIMENSIONS: INCH [mm] mm FOR REFERENCE ONLY		QUALITY PLAN NUMBER:		TOLERANCES:	WEIGHT	REV.	DATE	DWG.	CHK.	PART NUMBER
3" SMOOTH HDPE PIPE FOR FLEXIBLE FILLER & EXTERNAL GROUTED TENDON				UNLESS NOTED	0.92 LBS./FT.	△	05/28/20	S.I.		U00055112
				MATERIAL SEE ABOVE	SCALE 1 : 2					DRAWING NUMBER: U00055112
DATE: 09/19/18	DWG: I. TIRA	CHK: SI	APP: SI							
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TOP VIEW



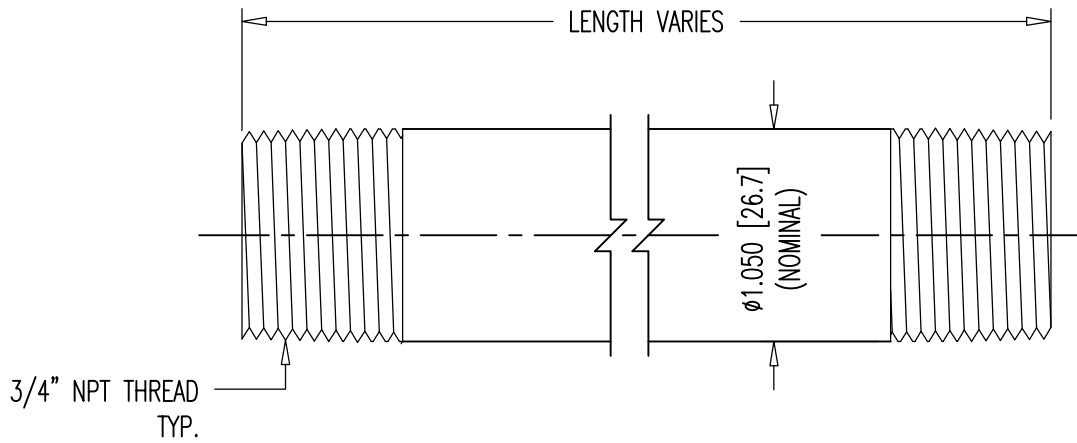
END VIEW
(NOT TO SCALE)

NOTE:
FOLLOW MANUFACTURER'S
INSTALLATION INSTRUCTIONS.

PIPE SIZE	STRAND SYSTEM	BAR SYSTEM	HEAT SHRINK SLEEVE SIZE	PART NUMBER
2 1/2" IPS DR 17	7-0.6"	1", 1 1/4", 1 3/8"	KLNN/L 63-450 BK	U00039063
3" SDR 17	12-0.6"	1 3/4", 1 3/8"	KLNN/L 90-450 BK	U00039090
4" SDR 17	19-0.6"	2 1/2", 3"	KLNN/L 115-450 BK	U00039115
5" SDR 17	27-0.6" & 31-0.6"		KLNN/L 125-450 BK	U00039125



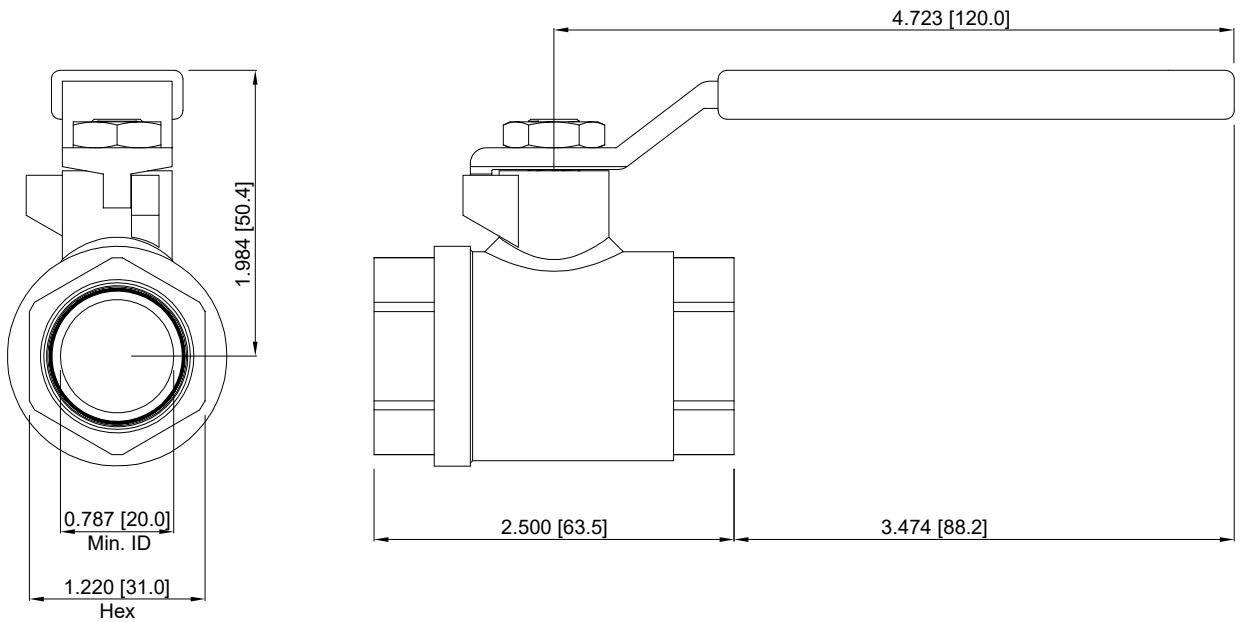
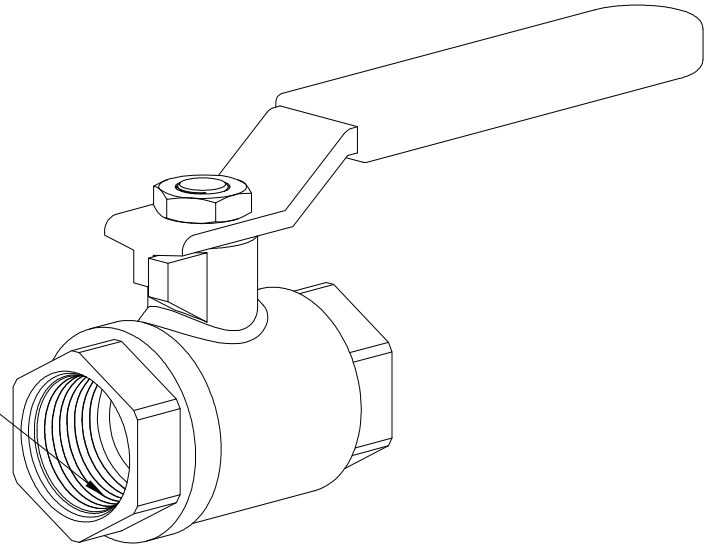
DIMENSIONS: INCH [mm] mm FOR REFERENCE ONLY		QUALITY PLAN NUMBER:		REV.	DATE	NAME	PART NUMBERS: U00039063 U00039090 U00039115 U00039125
KLNN HEAT SHRINK SLEEVE				△	05-28-20	SI	
				MATERIAL: POLYOLEFIN MEETS FDOT SPECS 960-2.2.1.8 FOR FLEXIBLE FILLER	SCALE XX		
DATE: 02-21-19	DWG: G. MALECKI	CHK: S.I.	APP: S.I.				
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PRESSURE RATED: 150 PSI

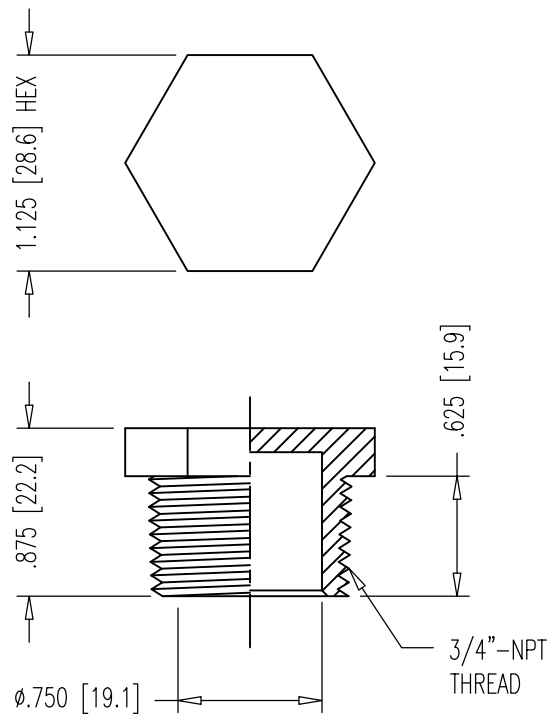
DIMENSIONS: INCH [mm] mm FOR REFERENCE ONLY	QUALITY PLAN NUMBER: Q00000020P			REV.	DATE	NAME	ECRN	PART NUMBER: 00 00 878
3/4" NPT PIPE NIPPLES								
				MATERIAL: SCH 40 BLACK WELDED STEEL	SCALE 1:1			
DATE: 01-29-19	DWG: G. MALECKI	CHK: S.I.	APP: S.I.					DRAWING NUMBER: 00 00 878
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3/4" NPT, 14 THREADS PER INCH,
0.55" THREAD ENGAGEMENT



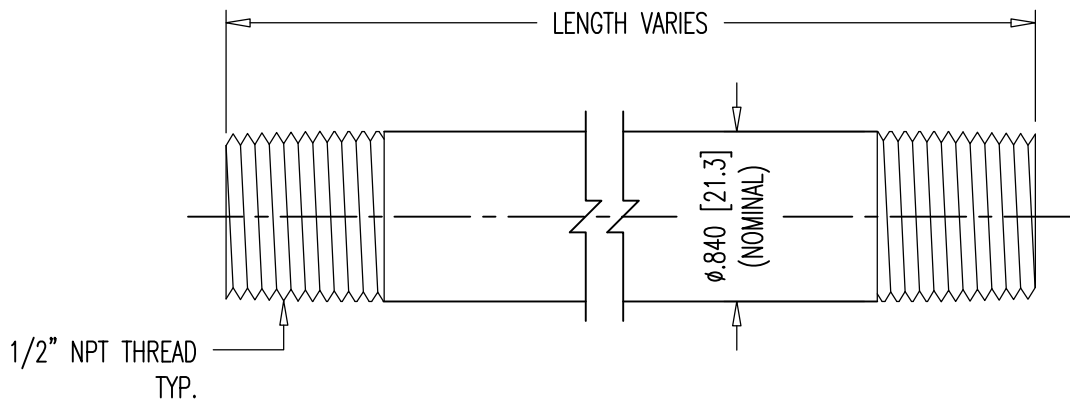
PRESSURE RATED: 150 PSI

DIMENSIONS: INCH [mm] mm FOR REFERENCE ONLY		QUALITY PLAN NUMBER:		WEIGHT	REV.	DATE	NAME	PART NUMBER
3/4" BALL VALVE				0.77 LBS.				00 00 838
				MATERIAL: BRASS	SCALE 3/4" = 1"			
DATE: 02/08/19	DWG: I. TIRA	CHK: SY	APP: SE					
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PRESSURE RATED: 150 PSI

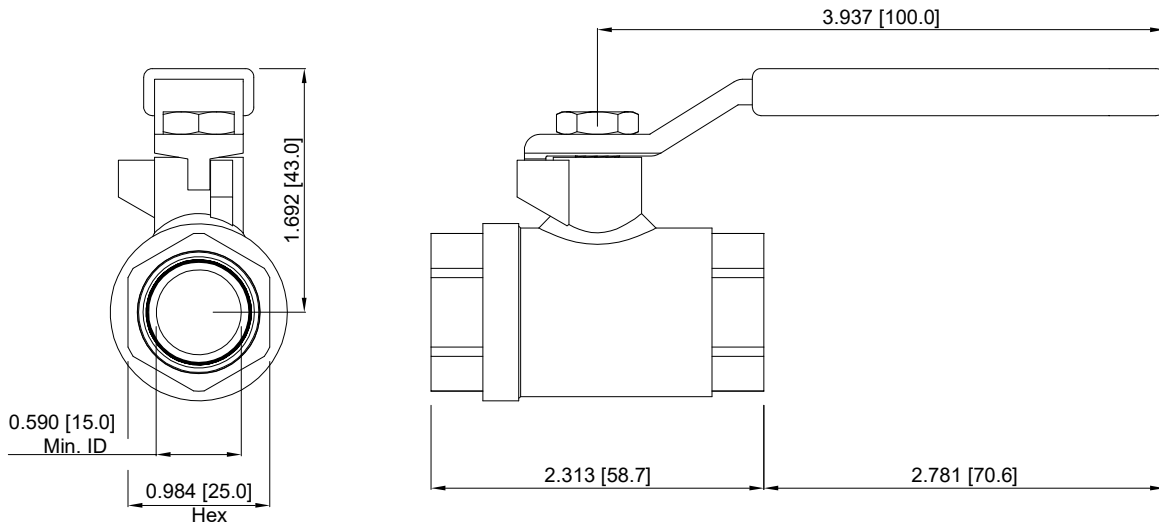
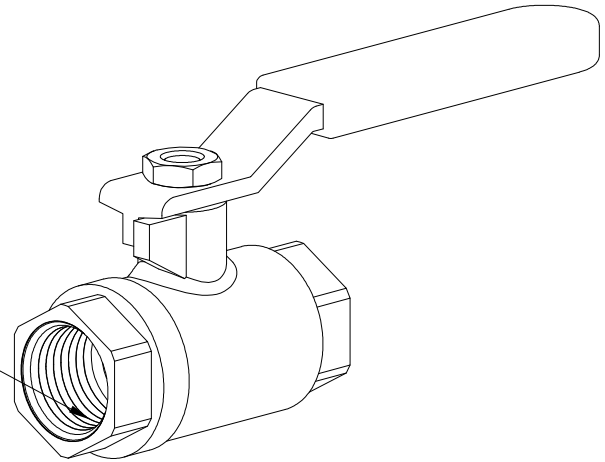
DIMENSIONS: INCH [mm] mm FOR REFERENCE ONLY		QUALITY PLAN NUMBER:		WEIGHT .009 LBS.	REV.	DATE	NAME	PART NUMBER: 00 00 849
3/4" NPT NYLON PLUG								
				DATE: 03-12-19	DWG: G. MALECKI	CHK: S.I.	APP: S.I..	DYWIDAG-SYSTEMS INTERNATIONAL, USA, INC. 320 MARMON DRIVE - BOLINGBROOK, IL 60440 PHONE: 630-739-1100 FAX: 630-739-1405
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PRESSURE RATED: 150 PSI

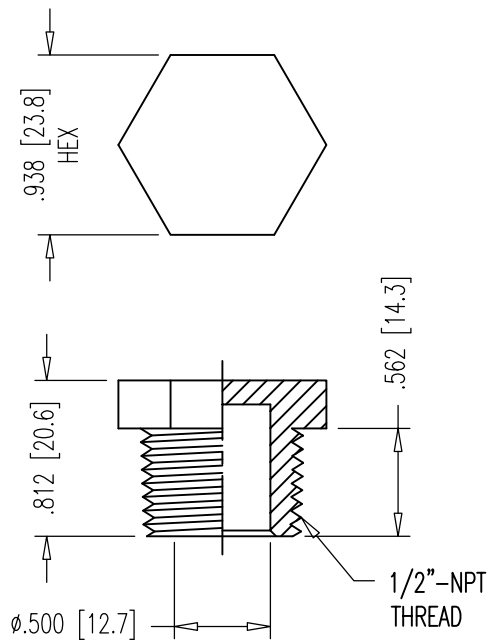
DIMENSIONS: INCH [mm] mm FOR REFERENCE ONLY		QUALITY PLAN NUMBER: Q000000020P		REV.	DATE	NAME	PART NUMBER: 00 00 678
1/2" NPT PIPE NIPPLES				MATERIAL: SCH 40 BLACK WELDED STEEL	SCALE 1:1		DRAWING NUMBER: 00 00 678
DATE: 01-29-19	DWG: G. MALECKI	CHK: S.I.	APP: S.I.				
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1/2" NPT, 14 THREADS PER INCH,
0.53" THREAD ENGAGEMENT



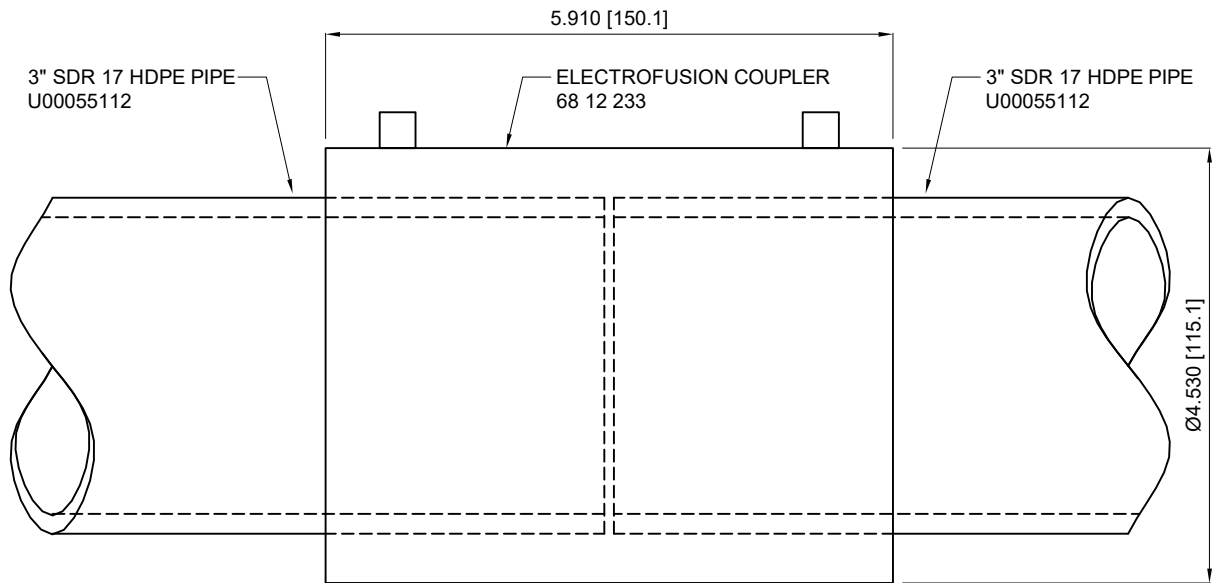
PRESSURE RATED: 150 PSI

DIMENSIONS: INCH [mm] mm FOR REFERENCE ONLY		QUALITY PLAN NUMBER:		WEIGHT -- LBS.	REV.	DATE	NAME	PART NUMBER 00 00 638
1/2" BALL VALVE								
DATE: 02/08/19	DWG: I. TIRA	CHK: SI	APP: SI					
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PRESSURE RATED: 150 PSI

DIMENSIONS: INCH [mm] mm FOR REFERENCE ONLY		QUALITY PLAN NUMBER:		WEIGHT .006 LBS.	REV.	DATE	NAME	ECRN	PART NUMBER: 00 00 649
1/2" NPT NYLON PLUG									
				DATE: 03-12-19	DWG: G. MALECKI	CHK: S.I.	APP: S.I.	MATERIAL: NYLON 6 COLOR: WHITE	
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INSTALLATION PROCEDURE:

(SEE MANUFACTURER INSTRUCTION MANUAL FOR DETAILED INSTRUCTIONS)

1. CUT PIPE ENDS PRECISELY AT RIGHT ANGLES TO THE PIPE AXIS.
2. CLEAN BOTH PIPE ENDS CAREFULLY.
3. SCRAP BOTH PIPES ENDS AS REQUIRED TO REMOVE THE OXIDE LAYER COMPLETELY
4. CLEAN BOTH PIPE ENDS WITH CONCENTRATED ISOPROPYL ALCOHOL.
5. USE REROUNDING TOOLS TO CORRECT OVAL PIPE IF NEEDED.
6. USE ALIGNMENT CLAMPS TO SECURE THE ALIGNMENT OF CONNECTED PIPES
7. PROVIDE SUPPORT TO THE PIPE AND COUPLER TO PREVENT ANY MOVEMENT.
8. ENSURE THERE IS NO EXISTING GAPS BETWEEN COUPLE AND PIPE FACE.
9. ATTACH LEADS OF THE FUSION PROCESSOR TO THE COUPLER.
10. SCAN THE BARCODE ON THE COUPLER AND CONFIRM THE COUPLER'S SIZE ON THE PROCESSOR SCREEN.
11. INITIATE FUSION PROCESS.
12. UNPLUG THE LEADS AS SOON AS THE FUSION PROCESS ENDS.
13. CHECK COOLING TIME OF THE PROVIDED COUPLER BASED ON COUPLER'S SIZE.
14. DO NOT ALLOW MOVEMENT OR APPLIED PRESSURE ON THE JOINTS BEFORE COOLING TIME ENDS.

DIMENSIONS: INCH [mm] mm FOR REFERENCE ONLY		QUALITY PLAN NUMBER:		WEIGHT 1.330 LBS	REV.	DATE	DWG.	CHK.	PART NUMBER 68 12 233
ELECTROFUSION COUPLER CONNECTION FOR 3" SDR 17 HDPE PIPE					MATERIAL:				
				DATE: 11/02/18 DWG: I. TIRA CHK: SI APP: SI				SCALE 1 : 2	
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				320 MARMON DRIVE - BOLINGBROOK, IL		FAX: 630-739-1405			