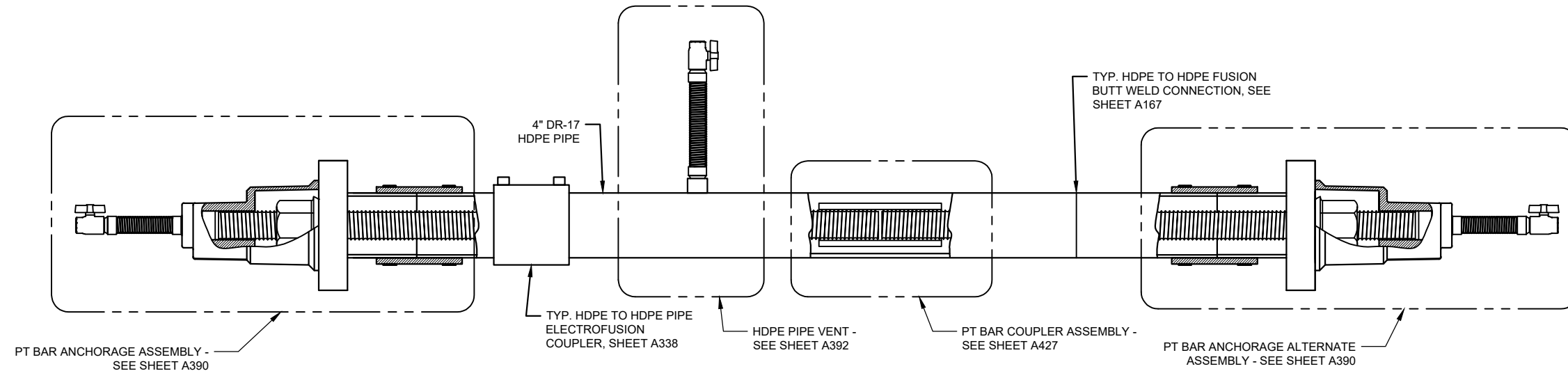


ELECTRONIC FILE LOCATION: I:\VSI_System Drawings\Work In Progress Drawings\Florida DOT Test 2017\1.75 External Grouted Bar System



OVERALL ASSEMBLY W/ BAR COUPLER
INSPECTION PORT NOT SHOWN FOR CLARITY

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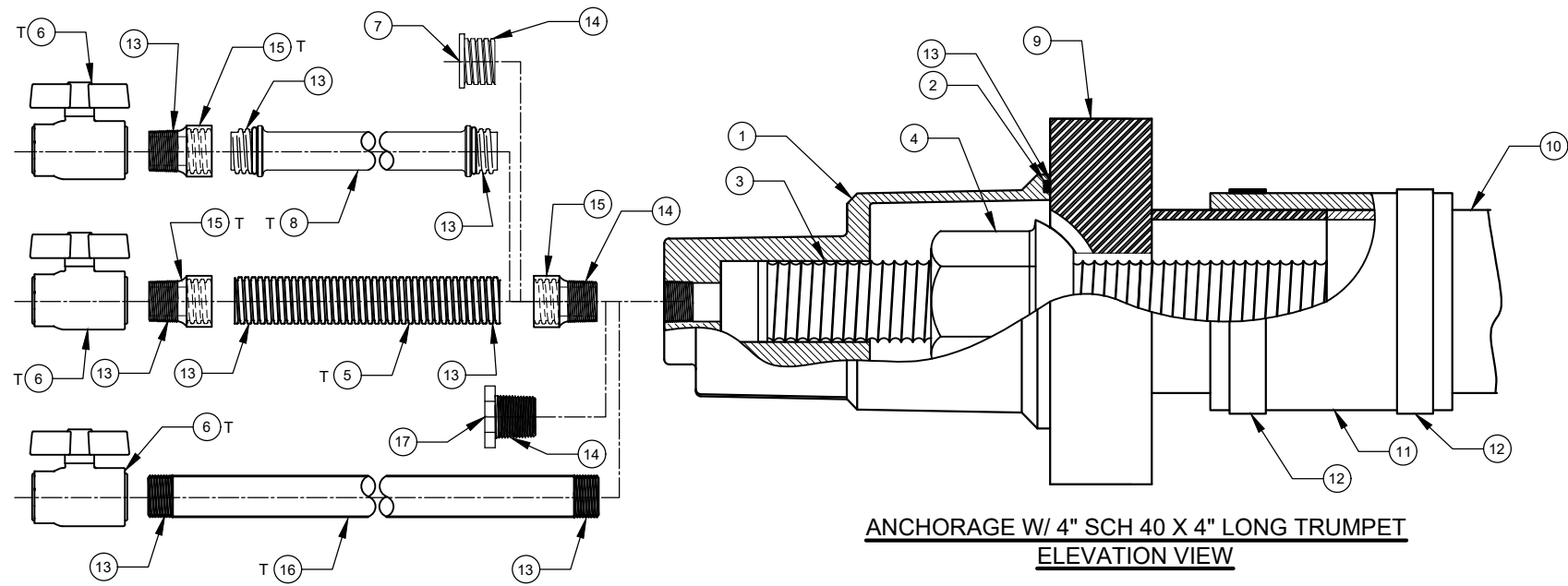
PROJECT NO:	SYSTEM	SCALE:	NTS
SHEET NO:			A389

SYSTEM DRAWINGS

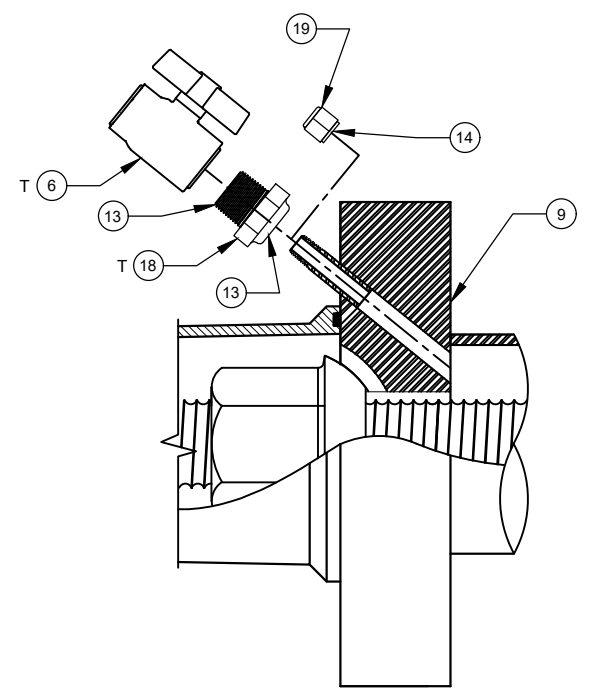
EXTERNAL BONDED 1 3/4" PT BAR W/
GROUT OVERALL ASSEMBLY

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NO	△	FIRST ISSUE	CDL ZX	13AUG2019
		DESCRIPTION	BY	CHK
				DATE



**ANCHORAGE W/ 4" SCH 40 X 4" LONG TRUMPET
ELEVATION VIEW**



**INSPECTION PORT ASSEMBLY
ELEVATION VIEW**

ITEM	QTY	DESCRIPTION	MATERIAL	INVENTORY #
1	1	WMS NYLON REINFORCED END CAP	ASTM D-4066, S PA-0221/ASTM D5989	R78-K1440095
2	1	WMS NYLON REINFORCED END CAP O-RING	BUNA-N 70 D	INCLUDED W/ CAP
3	1	WMS 46MM (1 3/4") GRADE 150 TYPE II, KSI ATB	ASTM A722-97, M275	R71-14-03600
4	1	WMS 46MM (1 3/4") SPHERICAL HEX NUT	ASTM A-536, 100-70-03, DUCTILE IRON	R88-14
5	1	23MM GROUT HOSE	HDPE	02DT0310
6	2	3/4" NPT PVC 1/4 TURN BALL VALVE	SCH 80 PVC	02DT01916
7	1	23MM GROUT PLUG	HDPE	02DT0341
8	1	23MM BP GROUT EXTENSION	POLYPROPYLENE	02DT0318
9	1	GALV. STEEL BEARING PLATE W/ FRONT INSPECTION PORT, 3/8" GROUT GROOVE & 4" SCH. 40 GALV. TRUMPET	ASTM A-36-01, AASHTO M183, ASTM A-53, ASTM A-512, ASTM A-123	JOB SPECIFIC
10	-	4" DR-17 PIPE	HDPE	-
11	1	EPDM SLEEVE 4-1/2 ID X6"	COMPOSITE	02MP41206
12	2	ELASTOMER SLEEVE BAND CLAMP	316 STAINLESS STEEL	02MP50048
13	-	SILICONE GREASE	-	-
14	-	BONDUIT	-	-
15	2	BR PLATE BUSHING 3/4" NPT 23mm	POLYPROPYLENE	02DT0316
16	1	3/4" NPT PVC NIPPLE	SCH 80 PVC	-
17	1	3/4" NPT PE PLUG	POLYETHYLENE	02DT01913
18	1	1/4" NPT TO 3/4" NPT BUSHING	SCH 80 PVC	02DT01935
19	1	1/4" NPT FEMALE HEX CAP	POLYPROPYLENE	02DT01907

- NOTES**
- ITEMS MARKED WITH A "T" ARE TEMPORARY AND ARE NOT A PERMANENT PART OF THE SYSTEM.
 - PIPE MUST BE PRESSURE RATED FOR 125 PSI.
 - ALL OTHER COMPONENTS EXCEPT DUCT MUST BE PRESSURE RATED FOR 150 PSI.
 - CONCRETE COVER MUST MEET FDOT STRUCTURES DESIGN GUIDELINES SECTION 1.4.2
 - INSPECTION PORT NOT SHOWN FOR CLARITY.
- INSTALLATION PROCEDURES (INSTALLATION PROCEDURE IS GENERIC. FOLLOW THE PROJECT SPECIFIC REQUIREMENTS AND THE FDOT SPECIFICATIONS)
- INSTALL BEARING PLATE WITH ORIENTATION THAT GROUT PORT IS IN RIGHT POSITION.
 - LINE UP THE PIPE WITH STEEL TRUMPET BEHIND THE BEARING PLATE, USE STEEL BAND TO SECURE THE CONNECTION IF EPDM SLEEVE IS USED.
 - IF VACUUM ASSISTED FILLER INJECTION WILL BE USED, THEN VACUUM TEST PER 462-8.2.1.2 JUST PRIOR TO CONCRETE PLACEMENT.
 - CONCRETE PLACEMENT OCCURS BY OTHERS.
 - INSTALL WMS PT BAR SPHERICAL NUT.
 - ONLY STRESS WMS BAR IF CONCRETE HAS REACHED REQUIRED STRENGTH SPECIFIED ON DRAWINGS.
 - ELONGATION SHOULD BE WITHIN ±7%.
 - AFTER FORM WORK IS REMOVED, INSTALL ANCHORAGE CAP WITH O-RING.
 - SYSTEM IS NOW READY TO AIR TEST.
 - PER THE FDOT SPECIFICATION SECTION 462-8.2.2, AIR PRESSURE TEST IS REQUIRED AFTER STRESSING AND PRIOR TO GROUT INJECTION.
 - GROUT TENDON PER GROUT SPEC.

- EPDM CONNECTION NOTES:**
- ROUGHEN 3" MIN. END OF HDPE PIPE WITH COARSE SANDPAPER
 - INSTALL 6" EPDM SLEEVE
 - INSTALL 2 SS BAND CLAMPS
 - CENTER EPDM SLEEVE OVER THE JOINT
 - APPLY 120 LBS SEATING FORCE PER BAND CLAMP
 - EPDM SLEEVE HAS NO IDENTIFYING TEXT OR MARKINGS, EPDM IS BLACK IN COLOR

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ELECTRONIC FILE LOCATION: I:\VSI_System Drawings\Work In Progress Drawings\Florida DOT Test 2017\1.75 External Grouted Bar System

PROJECT INFORMATION:

structural TECHNOLOGIES

Dallas, TX / Washington DC / Denver, CO / Pompano Beach, FL

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CORPORATE OFFICE COLUMBIA, MD 21046 structuraltechnologies.com

TITLE:
EXTERNAL BONDED 1 3/4" PT BAR W/ GROUT ANCHORAGE ASSEMBLY

PROJECT NO:
SYSTEM

SCALE:
NTS

SHEET NO:
A390

DESCRIPTION

NO

BY

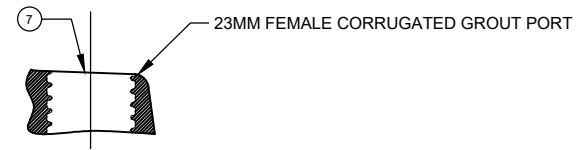
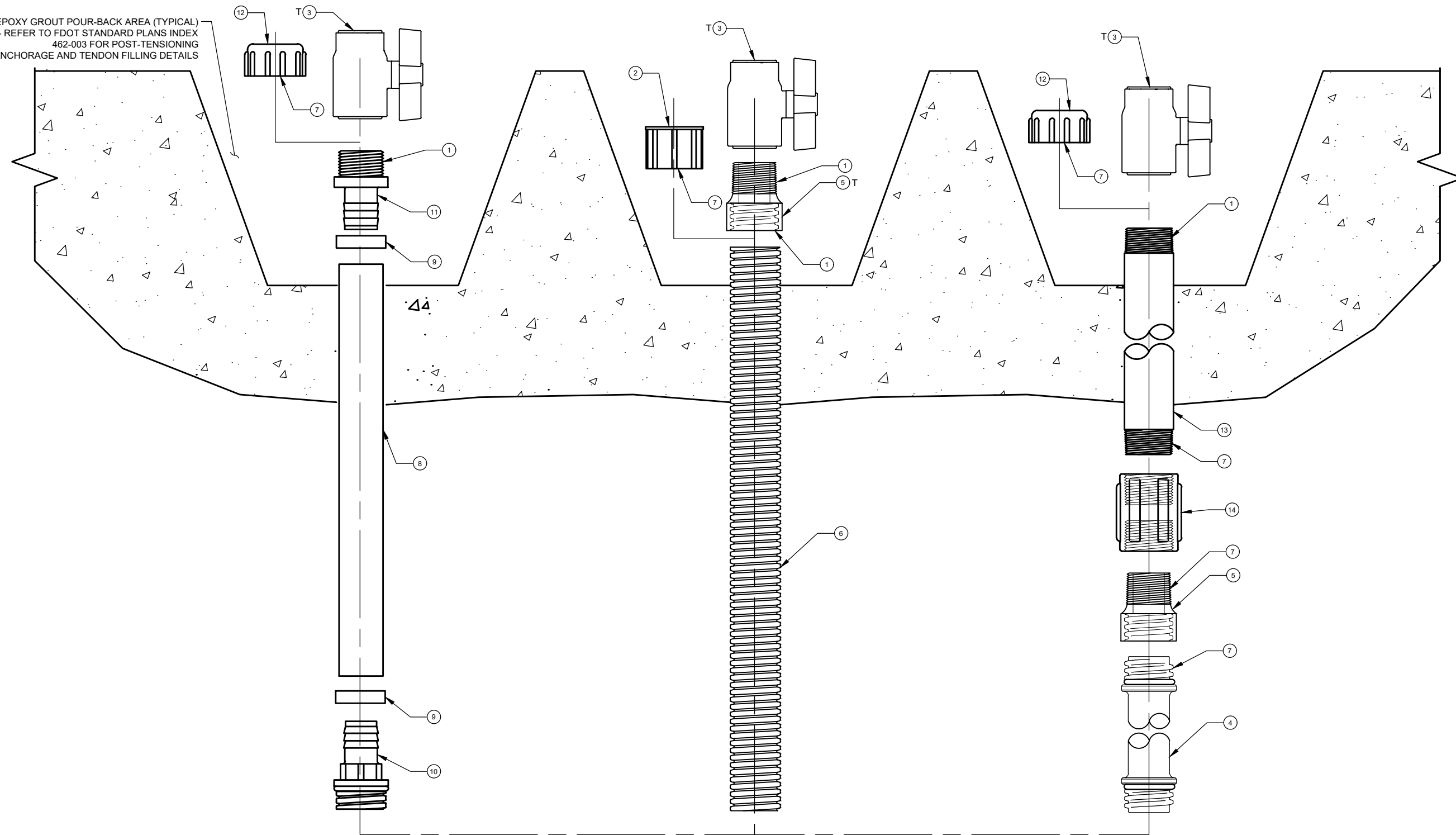
CDL ZX

DATE

FIRST ISSUE

28AUG2019

EPOXY GROUT POUR-BACK AREA (TYPICAL)
- REFER TO FDOT STANDARD PLANS INDEX
462-003 FOR POST-TENSIONING
ANCHORAGE AND TENDON FILLING DETAILS



ELECTRONIC FILE LOCATION: H:\SLS\System Drawings\Work In Progress Drawings\Florida DOT Test 2017\ECI 6-22 Grouted System

ITEM	QTY	DESCRIPTION	MATERIAL	INVENTORY #
1	-	SILICONE GREASE	-	-
2	1	23MM GROUT HOSE CAP	HDPE	02DT0314
3	1	3/4" NPT PVC 1/4 TURN BALL VALVE	SCH 80 PVC	02DT01916
4	1	23MM BP GROUT EXTENSION	POLYPROPYLENE	02DT0318
5	1	BR PLATE BUSHING 3/4" NPT 23MM	POLYPROPYLENE	02DT0316
6	-	23MM GROUT HOSE	HDPE	02DT0310
7	-	BONDUIT	-	-
8	1	3/4" SMOOTH HOSE	HDPE	02DT01901
9	2	3/4" ONE EAR BAND CLAMP	316 STAINLESS STEEL	02DT01905
10	1	3/4" HOSE BARB TO 23MM FITTING	POLYPROPYLENE	02DT01903
11	1	3/4" HOSE BARB TO 3/4" NPT FITTING	POLYPROPYLENE	02DT01908
12	1	3/4" NPT RIBBED CAP	POLYPROPYLENE	02DT01912
13	1	3/4" NPT PP NIPPLE	POLYPROPYLENE	-
14	1	3/4" NPT F/F PP COUPLER	POLYPROPYLENE	02DT01931

- NOTES:
- ITEMS MARKED WITH A "T" ARE TEMPORARY AND ARE NOT A PERMANENT PART OF THE SYSTEM.
 - ALL COMPONENTS MUST BE PRESSURE RATED FOR 150 PSI
 - MINIMUM CONCRETE COVER SHALL BE 2" AND MUST MEET FDOT STRUCTURES DESIGN GUIDELINES SECTION 1.4.2
 - COMPONENTS MAY BE ASSEMBLED AS A VENT OR A DRAIN AS REQUIRED.

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PROJECT INFORMATION:

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SYSTEM DRAWING

GROUT VENT CONFIGURATION USING CORRUGATED GROUT PORT

PROJECT NO: SYSTEM

SCALE: NTS

SHEET NO: A362

FIRST ISSUE

NO

CDL ZX

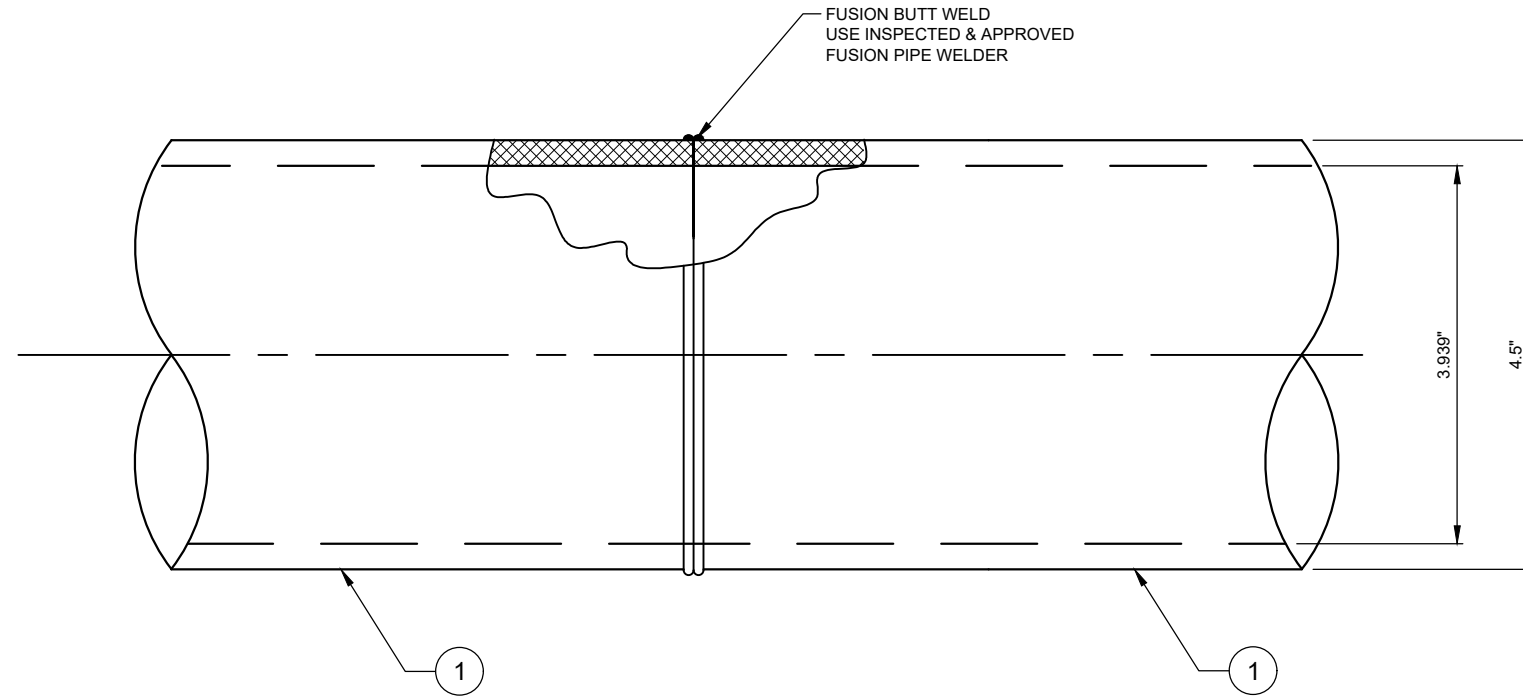
BY

CHK

DATE

DESCRIPTION

ELECTRONIC FILE LOCATION: I:\VSL\System Drawings\Work In Progress Drawings\Florida DOT Test 2017\ECI 6-19 Flexible Filler Submittal



ELEVATION VIEW

ITEM	QTY	DESCRIPTION	MATERIAL
1	2	4" HDPE PIPE DR-17	ASTM D3035

- NOTES:
 1. HDPE 4" IPS/DR-17 MEETS FDOT 960 SPEC.
 2. SEE VSL BUTT-WELDING PROCEDURE IN APPENDIX

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PROJECT INFORMATION:

SYSTEM DRAWING

TITLE:
4" HDPE TO 4" HDPE PIPE FUSION WELDED

PROJECT NO: SYSTEM
 SCALE: NTS

SHEET NO: **A167**

NO

FIRST ISSUE

DESCRIPTION

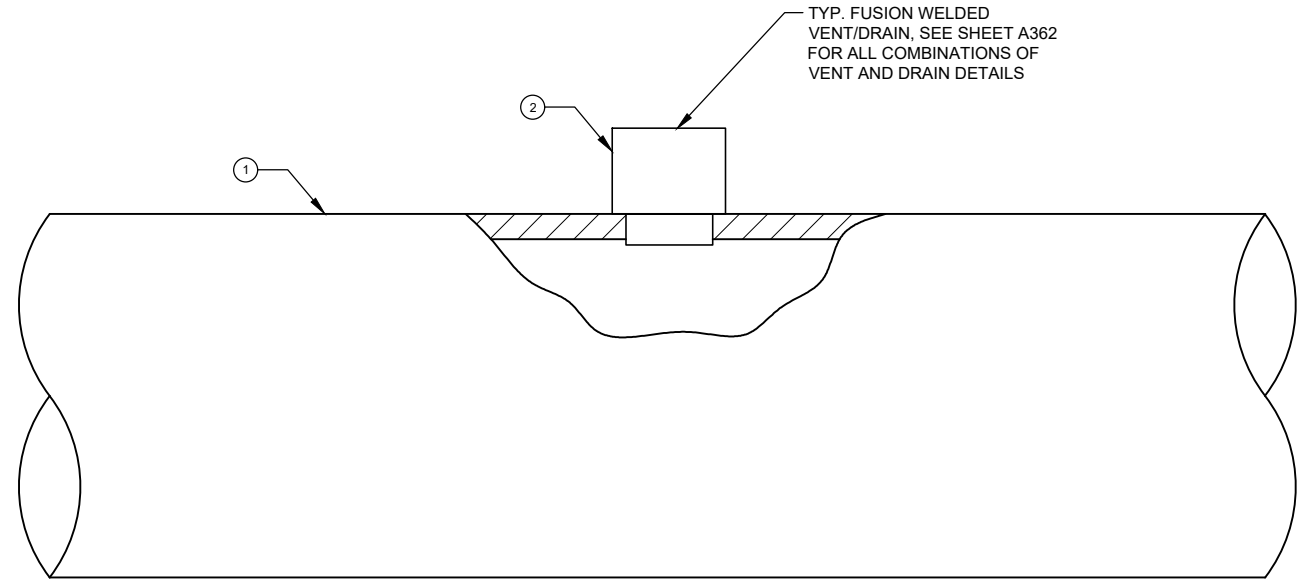
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18JUN2019
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ELECTRONIC FILE LOCATION: I:\VSI_System Drawings\Work In Progress Drawings\Florida DOT_Test 2017\1.75 External Grouded Bar System



ELEVATION VIEW

TYP. FUSION WELDED VENT/DRAIN, SEE SHEET A362 FOR ALL COMBINATIONS OF VENT AND DRAIN DETAILS

EXTERNAL GROUT PORT INSTALLATION

1. CLEAN PIPE PRIOR TO GROUT PORT INSTALLATION.
2. DRILL Ø7/8" HOLE INTO PIPE.
3. CONNECT THE SOCKET WELDING DEVICE TO THE POWER SOURCE.
4. ALLOW THE SOCKET WELDING DEVICE TO REACH ITS WORKING TEMPERATURE.
5. SIMULTANEOUSLY, INSERT MALE ADAPTER OF SOCKET WELDING DEVICE FROM DRILLED HOLE AND GROUT PORT FROM FEMALE ADAPTER.
6. APPLY LIGHT PRESSURE FOR 20-25 SECONDS BY PUSHING THE GROUT PORT WITH THE PALM OF HAND.
7. SIMULTANEOUSLY, REMOVE SOCKET WELDING DEVICE FROM DRILLED HOLE AND GROUT PORT FROM FEMALE ADAPTER.
8. INSERT GROUT PORT INTO HOLE UNTIL THE SHOULDER IS REACHED.
9. THIS OPERATION SHOULD BE CARRIED OUT AS QUICKLY AND CAREFULLY AS POSSIBLE, WITHIN 5 SECONDS. FIRMLY HOLD THE PIECES TOGETHER FOR A MINIMUM OF 10 SECONDS.

NOTES

1. THIS ASSEMBLY CAN BE APPLIED IN ANY REQUIRED ORIENTATION TO CREATE EITHER A VENT OR A DRAIN.
2. PIPE MUST BE PRESSURE RATED FOR 125 PSI.
3. ALL OTHER COMPONENTS MUST BE PRESSURE RATED FOR 150 PSI.
4. CONCRETE COVER MUST MEET FDOT STRUCTURES DESIGN GUIDELINES SECTION 1.4.2

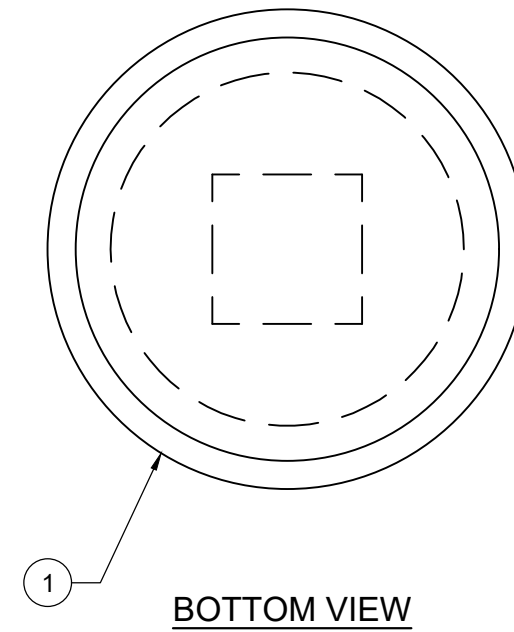
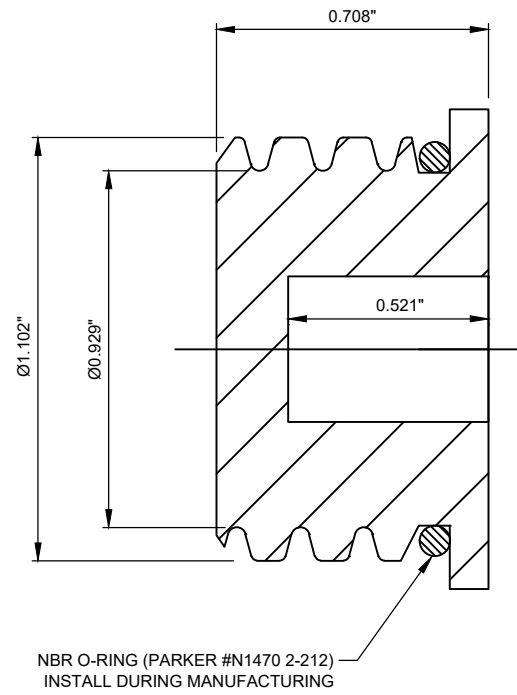
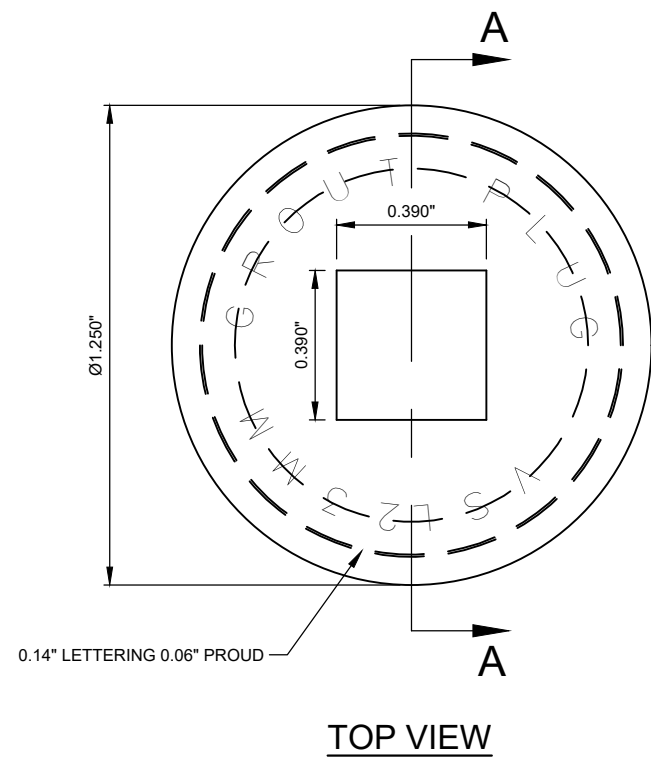
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ITEM	QTY	DESCRIPTION	MATERIAL	INVENTORY #
1	-	4" DR-17 PIPE	HDPE	-
2	1	EXTERNAL GROUT PORT 23MM	POLYETHYLENE	02DT0250

structural TECHNOLOGIES		Dallas, TX / Washington DC / Denver, CO / Pompano Beach, FL STRUTURAL TECHNOLOGIES, LLC 10160 OLD COLUMBIA RD CORPORATE OFFICE COLUMBIA, MD 21046		PHONE: (410) 850-7000 structuraltechnologies.com	
PROJECT INFORMATION:		SYSTEM DRAWING		TITLE: 4" HDPE PIPE GROUTED VENT ASSEMBLY	
PROJECT NO: SYSTEM		SCALE: NTS		SHEET NO: A392	
NO	NO	NO	NO	NO	NO
△	△	△	△	△	△
FIRST ISSUE	CDL	ZK	BY	CHK	DATE
DESCRIPTION				18JUN2019	18JUN2019

ELECTRONIC FILE LOCATION: I:\VSL_System Drawings\Work In Progress Drawings\Florida DOT Test 2017\ECI 6-19 Grouted System



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ITEM	QTY	DESCRIPTION	MATERIAL	INVENTORY #
1	-	BEARING PLATE GROUT PLUG 23MM	HDPE	02DT0341

PROJECT INFORMATION:

SYSTEM DRAWING

23MM GROUT PLUG

PROJECT NO: SYSTEM
SHEET NO:

SCALE: NTS

C583

structural TECHNOLOGIES

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△ FIRST ISSUE

NO

DESCRIPTION

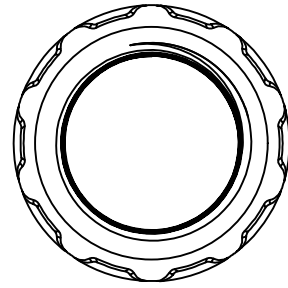
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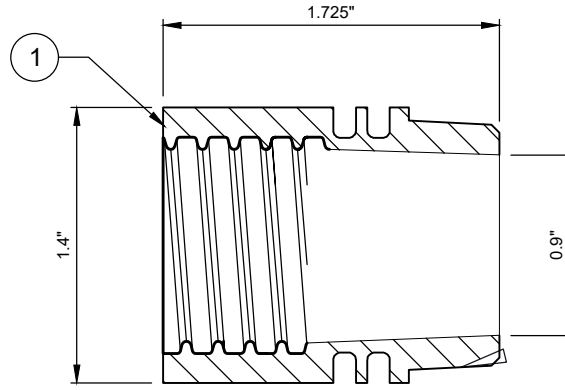
CDL ZX 18JUN2019

DATE

ELECTRONIC FILE LOCATION: I:\VSI_System Drawings\Work In Progress Drawings\Florida DOT_Test 2017\1.75 External Grouted Bar System



END VIEW



SIDE VIEW

NOTE: MATERIAL MEETS OR EXCEEDS FDOT SPECIFICATION 960

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ITEM	QTY	DESCRIPTION	MATERIAL	INVENTORY #
1	-	EXTERNAL GROUT PORT 23MM	POLYETHYLENE	02DT0250

PROJECT INFORMATION:

SYSTEM DRAWING

EXTERNAL GROUT PORT 23MM

PROJECT NO:
SYSTEM

SCALE:
NTS

SHEET NO:

C585

NO
FIRST ISSUE

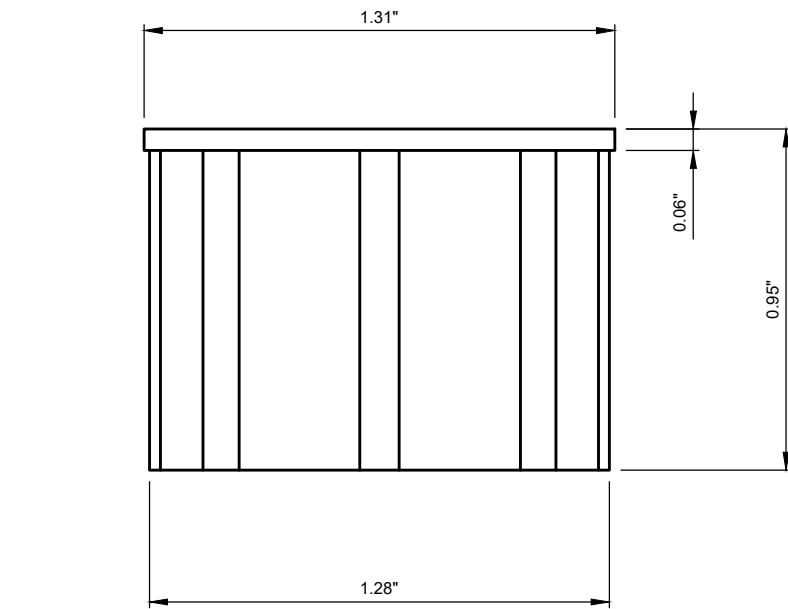
BY
CDL ZK

DESCRIPTION

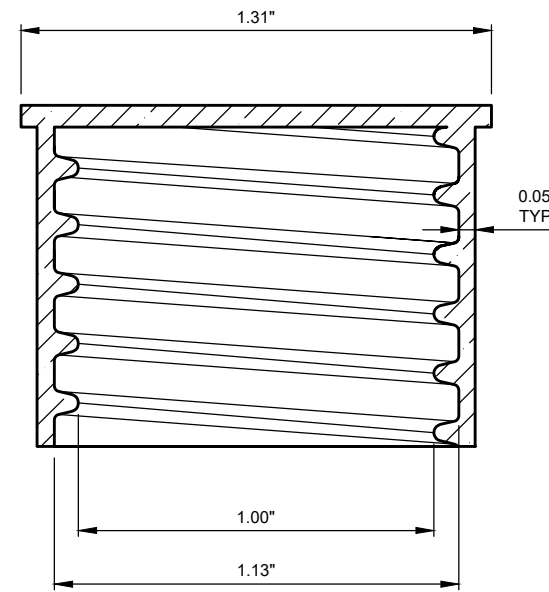
DATE
18JUN2019

structural TECHNOLOGIES
 Dallas, TX / Washington DC / Denver, CO / Pompano Beach, FL
 STRUCTURAL TECHNOLOGIES, LLC 10160 OLD COLUMBIA RD
 CORPORATE OFFICE COLUMBIA, MD 21046
 PHONE: (410) 850-7000
 structuraltechnologies.com

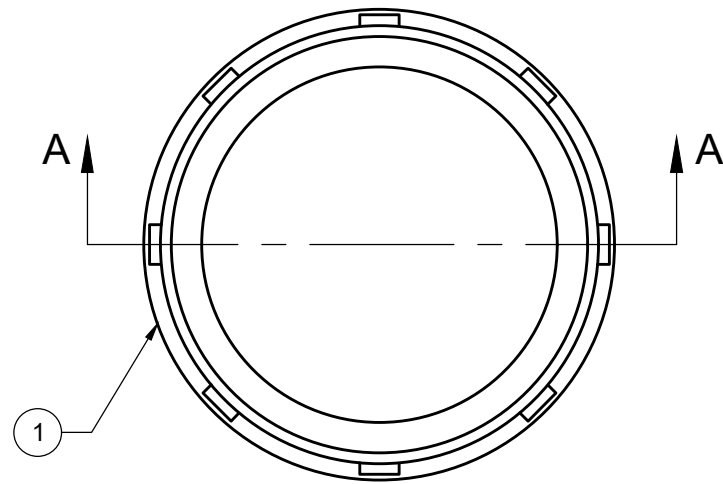
ELECTRONIC FILE LOCATION: I:\VSI_System Drawings\Work In Progress Drawings\Florida DOT_Test 2017\ECI 6-22_Grouted System



FRONT VIEW



SECTION A-A



TOP VIEW

NOTE: MATERIAL MEETS OR EXCEEDS FDOT SPECIFICATION 960

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ITEM	QTY	DESCRIPTION	MATERIAL	INVENTORY #
1	-	23MM GROUT HOSE CAP	HDPE	02DT0314

PROJECT INFORMATION:

PROJECT NO:	SYSTEM	SCALE:	NTS
SHEET NO:			C586

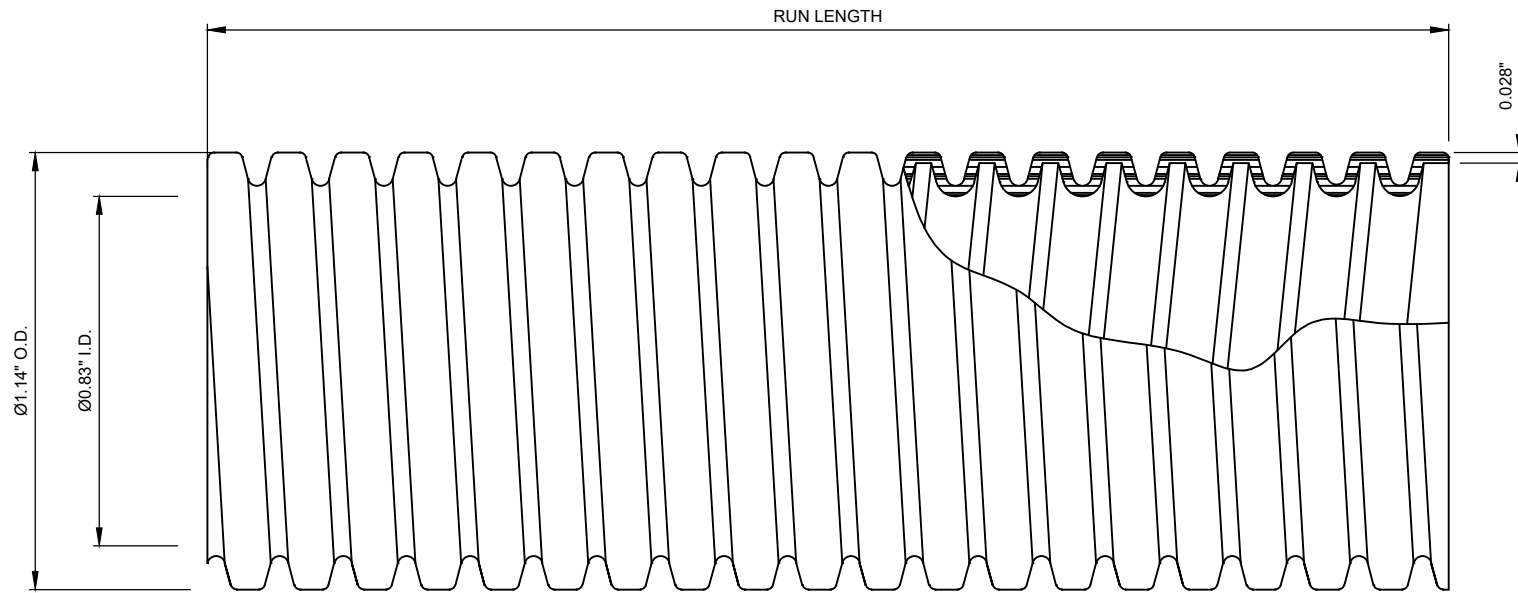
SYSTEM DRAWING

23MM GROUT HOSE CAP

structural TECHNOLOGIES
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NO	DESCRIPTION	BY	CHK	DATE
1	FIRST ISSUE	CDL	ZX	18JUN2019

ELECTRONIC FILE LOCATION: I:\VSL_System Drawings\Work In Progress Drawings\Florida DOT Test 2017\ECI 6-22 Grouted System



SIDE VIEW

ITEM	QTY	DESCRIPTION	MATERIAL	INVENTORY #
1	-	23MM GROUT HOSE	HDPE	02DT0310

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PROJECT INFORMATION:

SYSTEM DRAWING

23MM HOSE

PROJECT NO:	SYSTEM	SCALE:	NTS
SHEET NO:			C587

structural TECHNOLOGIES

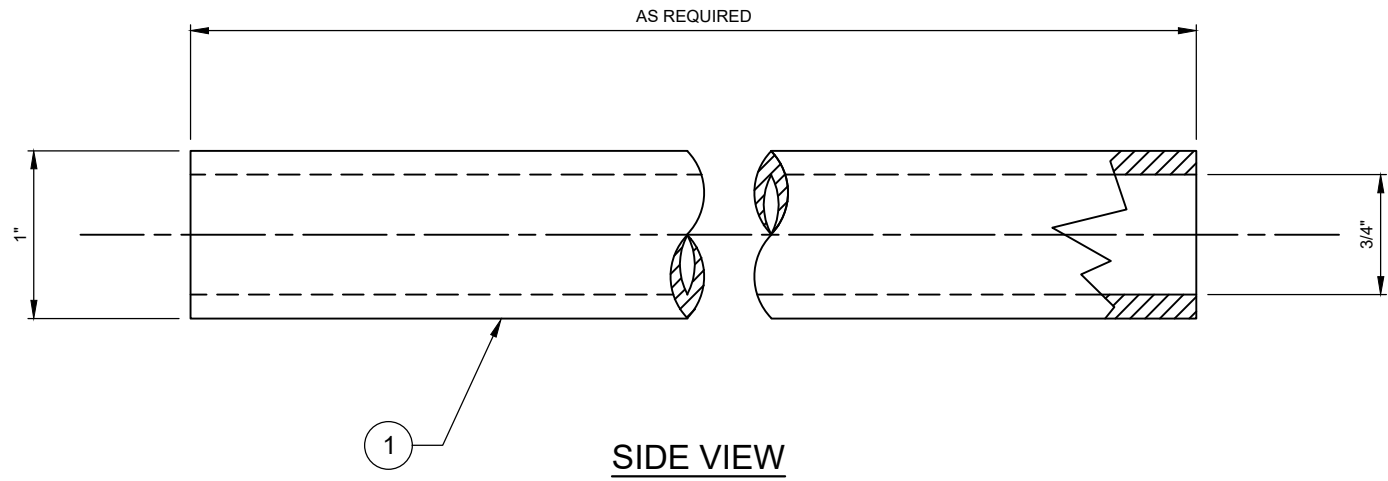
Dallas, TX / Washington DC / Denver, CO / Pompano Beach, FL

STRUCTURAL TECHNOLOGIES, LLC 10150 OLD COLUMBIA RD COLUMBIA, MD 21046

PHONE: (410) 860-7000
structuraltechnologies.com

NO	NO	FIRST ISSUE	CDL ZX	18JUN2019
		DESCRIPTION	BY	CHK
				DATE

ELECTRONIC FILE LOCATION: I:\VSL_System Drawings\Work In Progress Drawings\Florida DOT_Test 2017\NCS 6-31 Flexible Filler Submittal\16FEB2018 Revision



SIDE VIEW

NOTE: MATERIAL MEETS OR EXCEEDS FDOT SPECIFICATION 960

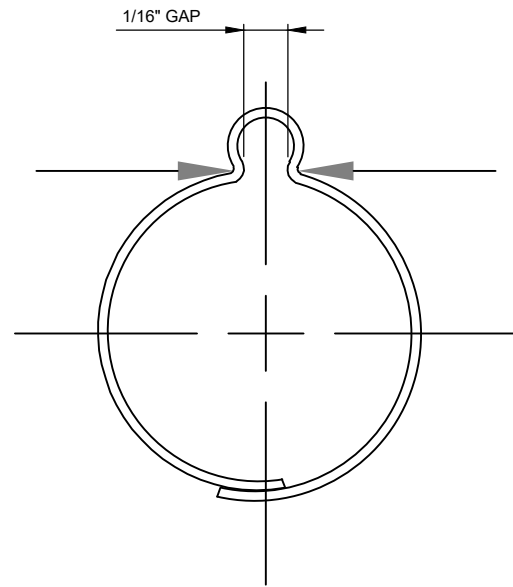
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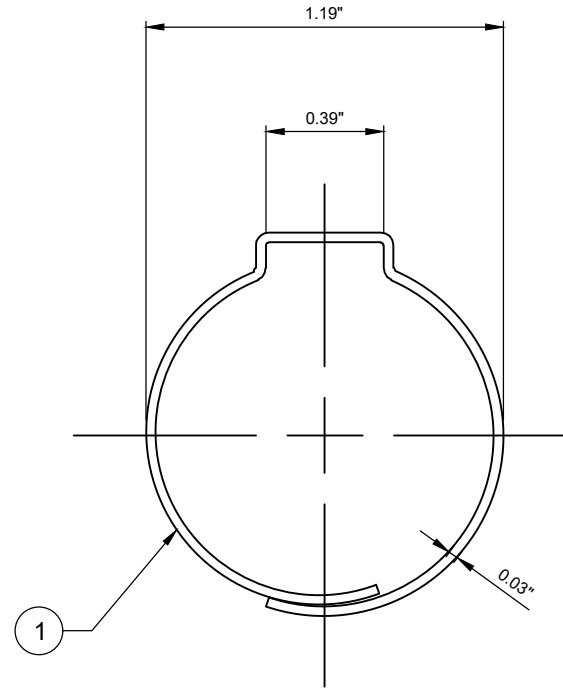
ITEM	QTY	DESCRIPTION	MATERIAL	INVENTORY #
1	-	3/4" SMOOTH HOSE	HDPE BLACK	02DT01901

PROJECT INFORMATION:		SYSTEM DRAWING		STRUCTURAL TECHNOLOGIES, LLC CORPORATE OFFICE		Dallas, TX / Washington DC / Denver, CO / Pompano Beach, FL		PHONE: (410) 850-7000 structuraltechnologies.com	
		3/4" SMOOTH HOSE		TITLE:		10160 OLD COLUMBIA RD COLUMBIA, MD 21046		STRUCTURAL TECHNOLOGIES, LLC	
PROJECT NO:		SYSTEM		SCALE:		NTS		FIRST ISSUE	
SHEET NO:		C685		NO		BY		CDL ZX	
				DESCRIPTION		BY		CHK	
								17JUN2019	
								DATE	

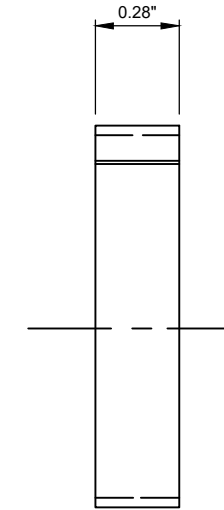
ELECTRONIC FILE LOCATION: I:\VSI_System Drawings\Work In Progress Drawings\Florida DOT_Test 2017\ECI 6-22_Grouted System



INSTALLED
[AFTER CRIMPING]



OPEN
[AS SUPPLIED]



SIDE VIEW

INSTALLATION INSTRUCTIONS:

1. SLIDE BAND OVER HOSE AND ALIGN OVER BARBS ON FITTING
2. CRIMP EAR ON BAND WITH PLIERS USING EITHER DIAGONAL CUTTERS OR END NIPPERS

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ITEM	QTY	DESCRIPTION	MATERIAL	INVENTORY #
1	-	3/4" ONE EAR BAND CLAMP	316 STAINLESS STEEL	02DT01905

PROJECT INFORMATION:

SYSTEM DRAWING

PROJECT NO:
SYSTEM

SHEET NO:

TITLE:
3/4" ONE EAR BAND CLAMP

SCALE:
NTS

C690

structural
TECHNOLOGIES

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CORPORATE OFFICE COLUMBIA, MD 21046
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FIRST ISSUE

NO

DESCRIPTION

BY

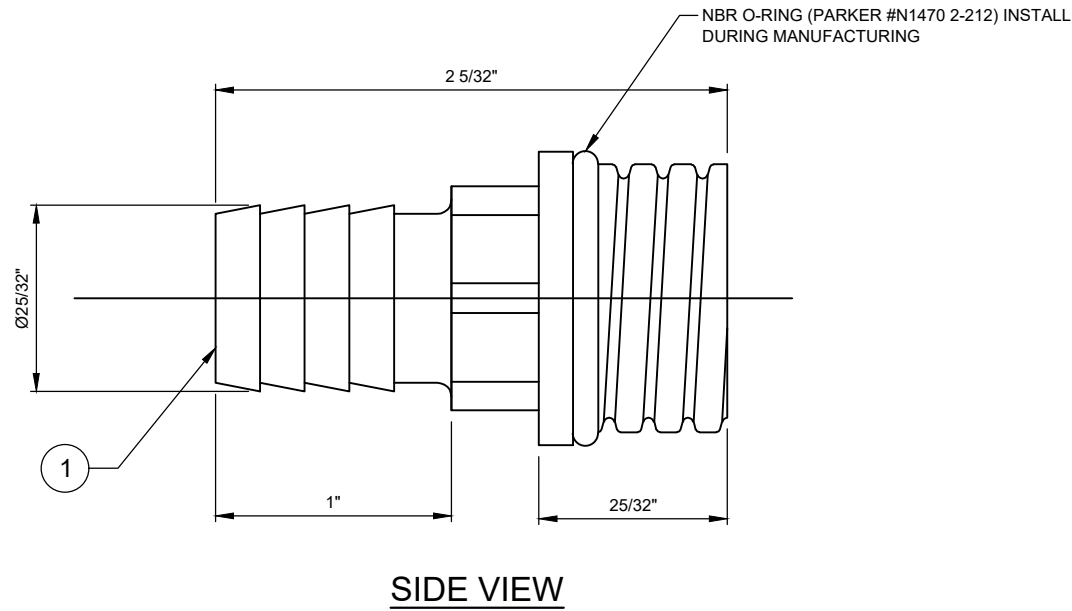
CDL ZX

CHK

DATE

18JUN2019

ELECTRONIC FILE LOCATION: I:\VSI_System Drawings\Work In Progress Drawings\Florida DOT_Test 2017\ECI 6-22_Grouted System



SIDE VIEW

NOTE: MATERIAL MEETS OR EXCEEDS FDOT SPECIFICATION 960

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ITEM	QTY	DESCRIPTION	MATERIAL	INVENTORY #
1	-	3/4" HOSE BARB TO 23MM FITTING	BLACK POLYPROPYLENE	02DT01903

PROJECT INFORMATION:

SYSTEM DRAWING

TITLE: 3/4" HOSE BARB TO 23MM FITTING

PROJECT NO:

SYSTEM

SCALE:

NTS

SHEET NO:

C692

NO

FIRST ISSUE

CDL ZK

DESCRIPTION

BY

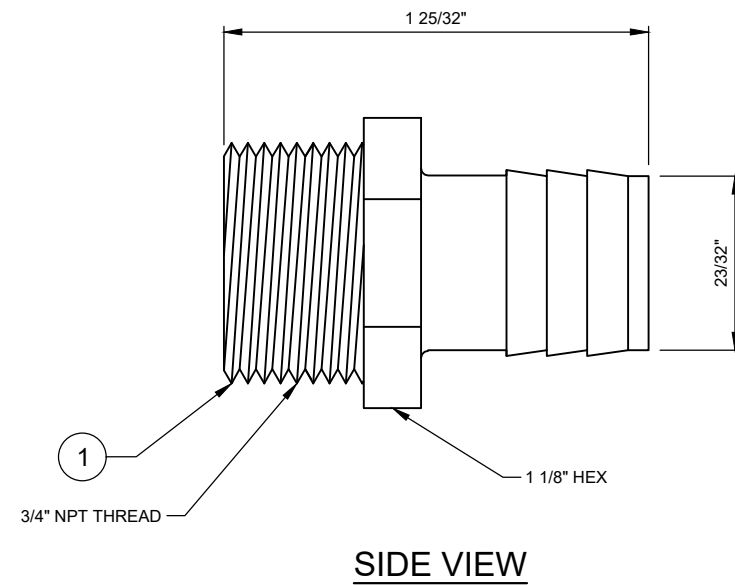
CHK

DATE

structural TECHNOLOGIES

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 PHONE: (410) 860-7000
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ELECTRONIC FILE LOCATION: I:\VSI_System Drawings\Work In Progress Drawings\Florida DOT_Test 2017\ECI 6-22_Grouted System



SIDE VIEW

NOTE: MATERIAL MEETS OR EXCEEDS FDOT SPECIFICATION 960

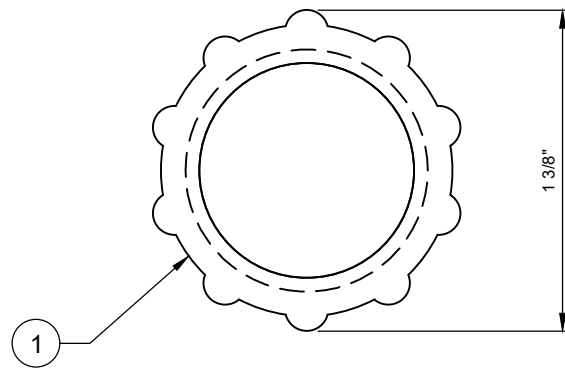
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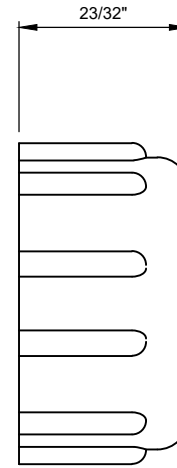
ITEM	QTY	DESCRIPTION	MATERIAL	INVENTORY #
1	-	3/4" HOSE BARB TO 3/4" NPT FITTING	BLACK POLYPROPYLENE	02DT01908

<p>structural TECHNOLOGIES Dallas, TX / Washington DC / Denver, CO / Pompano Beach, FL STRUCTURAL TECHNOLOGIES, LLC 10160 OLD COLUMBIA RD CORPORATE OFFICE COLUMBIA, MD 21046 PHONE: (410) 850-7000 structuraltechnologies.com</p>		NO	CDL	ZX	18JUN2019
		NO	BY	CHK	DATE
<p>PROJECT INFORMATION:</p> <p>SYSTEM DRAWING</p> <p>3/4" HOSE BARB TO 3/4" NPT FITTING</p>		<p>DESCRIPTION</p>			
<p>PROJECT NO: SYSTEM</p> <p>SHEET NO: C694</p>		<p>SCALE: NTS</p>			

ELECTRONIC FILE LOCATION: I:\VSL_System Drawings\Work In Progress Drawings\Florida DOT Test 2017\ECI 6-22 Grouted System



TOP VIEW



SIDE VIEW

ITEM	QTY	DESCRIPTION	MATERIAL	INVENTORY #
1	-	3/4" NPT RIBBED CAP	POLYPROPYLENE	02DT01912

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PROJECT INFORMATION:

SYSTEM DRAWING

3/4" NPT RIBBED CAP

PROJECT NO:
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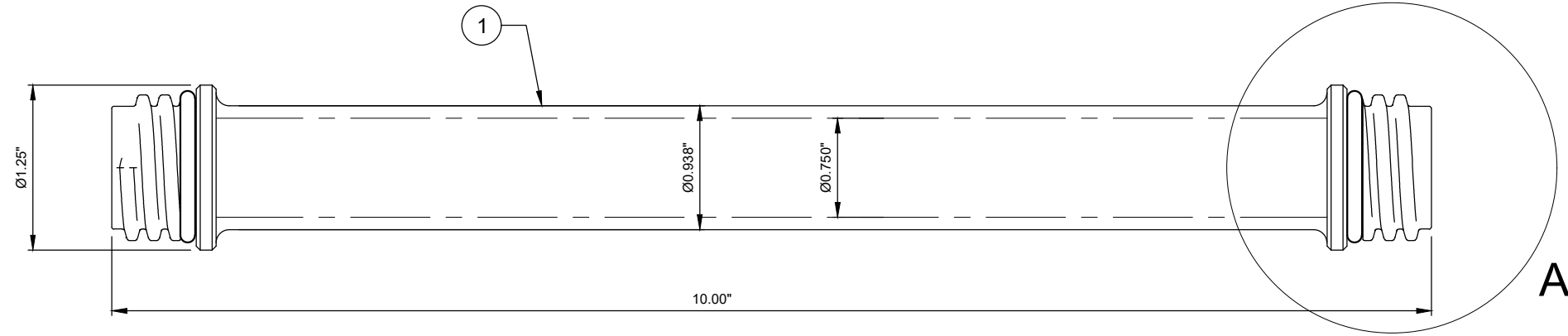
SCALE:
NTS

SHEET NO:
C701

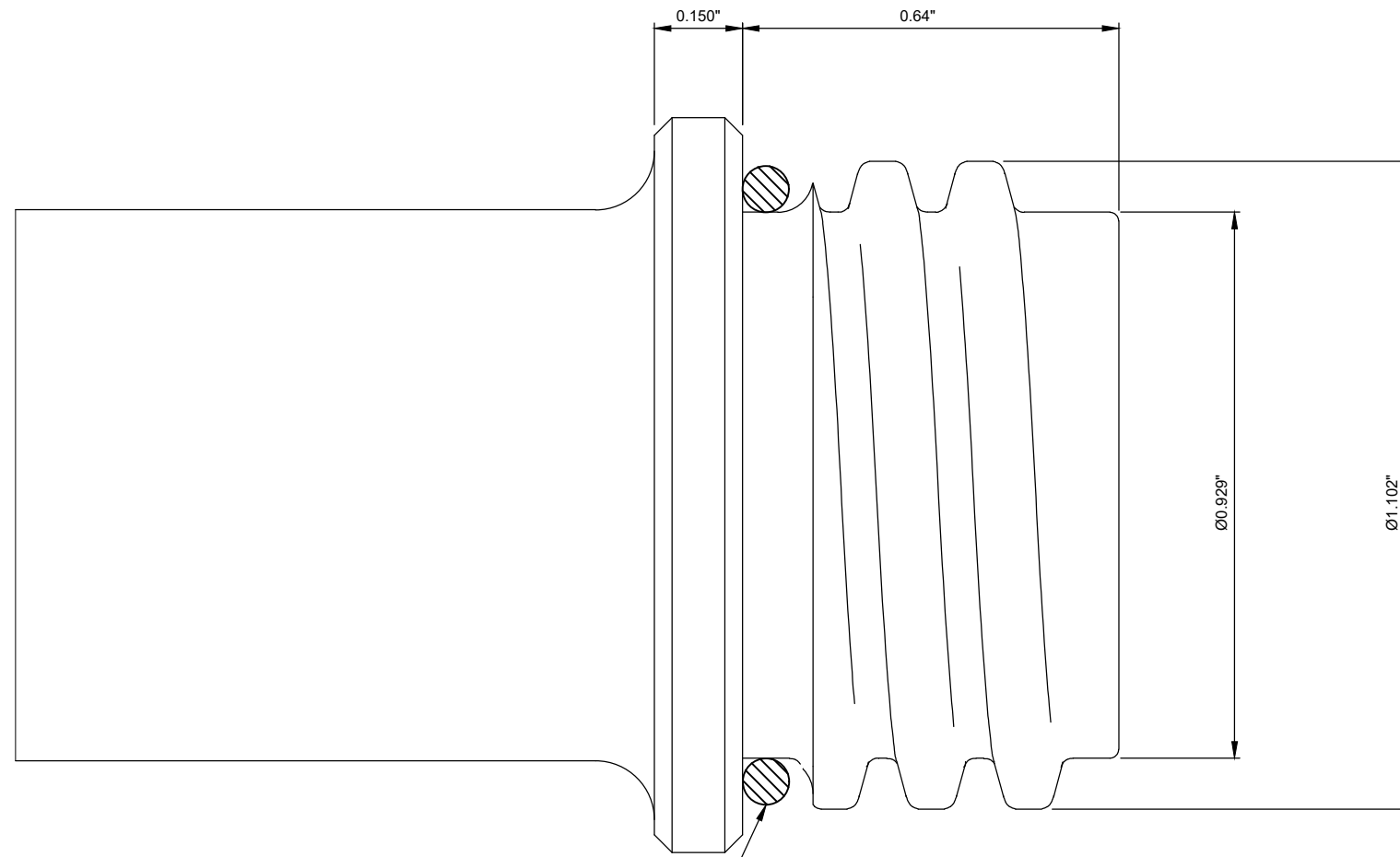
structural TECHNOLOGIES
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NO	NO	NO	NO	NO
△	△	△	△	△
FIRST ISSUE	CDL	ZX	18JUN2019	DATE
DESCRIPTION	BY	CHK		

ELECTRONIC FILE LOCATION: I:\VSI_System Drawings\Work In Progress Drawings\Florida DOT_Test 2017\ECI 6-22_Grouted System



SIDE VIEW



NBR O-RING (PARKER #N1470 2-212) INSTALL DURING MANUFACTURING

DETAIL A

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ITEM	QTY	DESCRIPTION	MATERIAL	INVENTORY #
1	-	BEARING PLATE GROUT EXTENSION	WHITE POLYPROPYLENE	02DT0318

PROJECT INFORMATION:

PROJECT NO:	SYSTEM	SCALE:	NTS
SHEET NO:			C714

SYSTEM DRAWINGS

23MM BP GROUT EXTENSION DETAILS

structural TECHNOLOGIES

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18JUN2019

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CHK

CDL

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18JUN2019

DATE

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CHK

CDL

ZK

18JUN2019

DATE

NO

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NO

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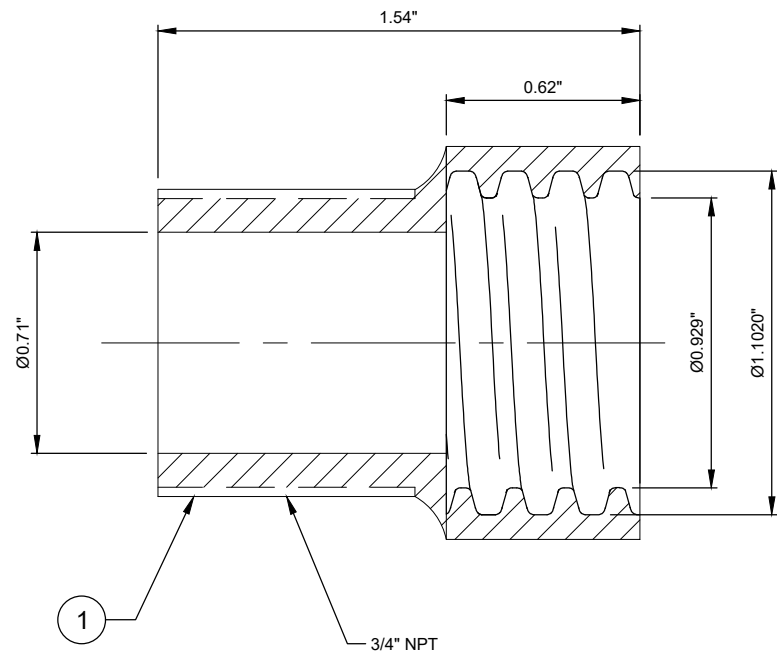
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DESCRIPTION

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DESCRIPTION

ELECTRONIC FILE LOCATION: I:\VSI_System Drawings\Work In Progress Drawings\Florida DOT_Test 2017\ECI 6-22_Grouted System



SECTION VIEW

NOTE: MATERIAL MEETS OR EXCEEDS FDOT SPECIFICATION 960

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ITEM	QTY	DESCRIPTION	MATERIAL	INVENTORY #
1	-	23MM F3/4 FITTING	BLACK POLYPROPYLENE	02DT0316

PROJECT INFORMATION:

SYSTEM DRAWING

TITLE: 23MM F3/4 FITTING FABRICATION

PROJECT NO: SYSTEM

SHEET NO:

SCALE: NTS

C715

NO

FIRST ISSUE

DESCRIPTION

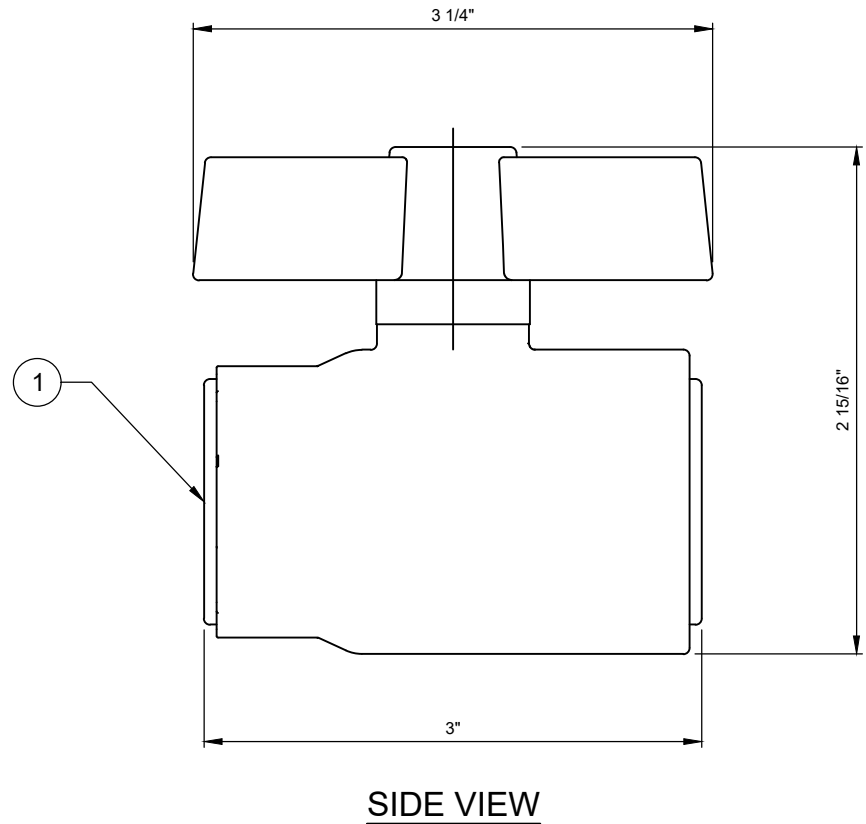
BY CDL

CHK ZX

DATE 18JUN2019

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 structuraltechnologies.com

ELECTRONIC FILE LOCATION: I:\VSI_System Drawings\Work In Progress Drawings\Florida DOT_Test 2017\ECI 6-22_Grouted System



SIDE VIEW

NOTE: MATERIAL MEETS OR EXCEEDS FDOT SPECIFICATION 960

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ITEM	QTY	DESCRIPTION	MATERIAL	INVENTORY #
1	-	3/4" NPT 1/4 TURN BALL VALVE	SCH 80 PVC	02DT01916

PROJECT INFORMATION:

SYSTEM DRAWING

TITLE:
3/4" NPT 1/4 TURN BALL VALVE

PROJECT NO:
SYSTEM

SHEET NO:

SCALE:
NTS

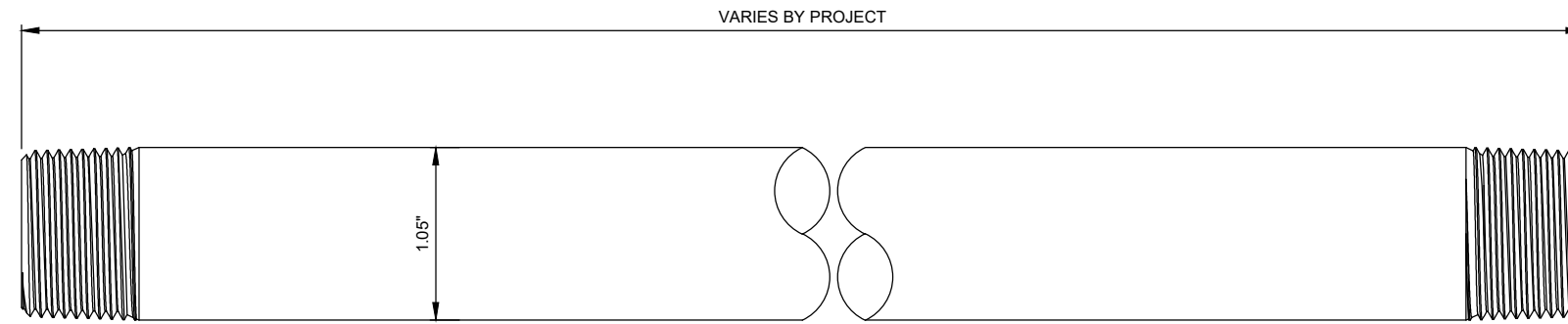
C720

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NO	△	FIRST ISSUE
NO	BY	DESCRIPTION
NO	CDL	ZX
NO	BY	CHK
NO	BY	DATE

NO	CDL	ZX	18JUN2019
NO	BY	CHK	DATE

ELECTRONIC FILE LOCATION: I:\VSI_System Drawings\Work In Progress Drawings\Florida DOT_Test 2017\ECI 6-22_Grouted System



SIDE VIEW

ITEM	QTY	DESCRIPTION	MATERIAL
1	-	3/4" NPT PP NIPPLE	SCH 80 POLYPROPYLENE

NOTE: THIS IS A TEMPORARY ITEM.

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PROJECT INFORMATION:

SYSTEM DRAWING

STRUCTURAL TECHNOLOGIES, LLC
DALLAS OFFICE

**structural
TECHNOLOGIES**
Dallas, TX / Washington DC / Denver, CO / Pompano Beach, FL

PHONE: (817) 545-4807
FAX: (817) 545-4827
structuraltechnologies.com

NO
FIRST ISSUE

CDL ZK
BY
DESCRIPTION

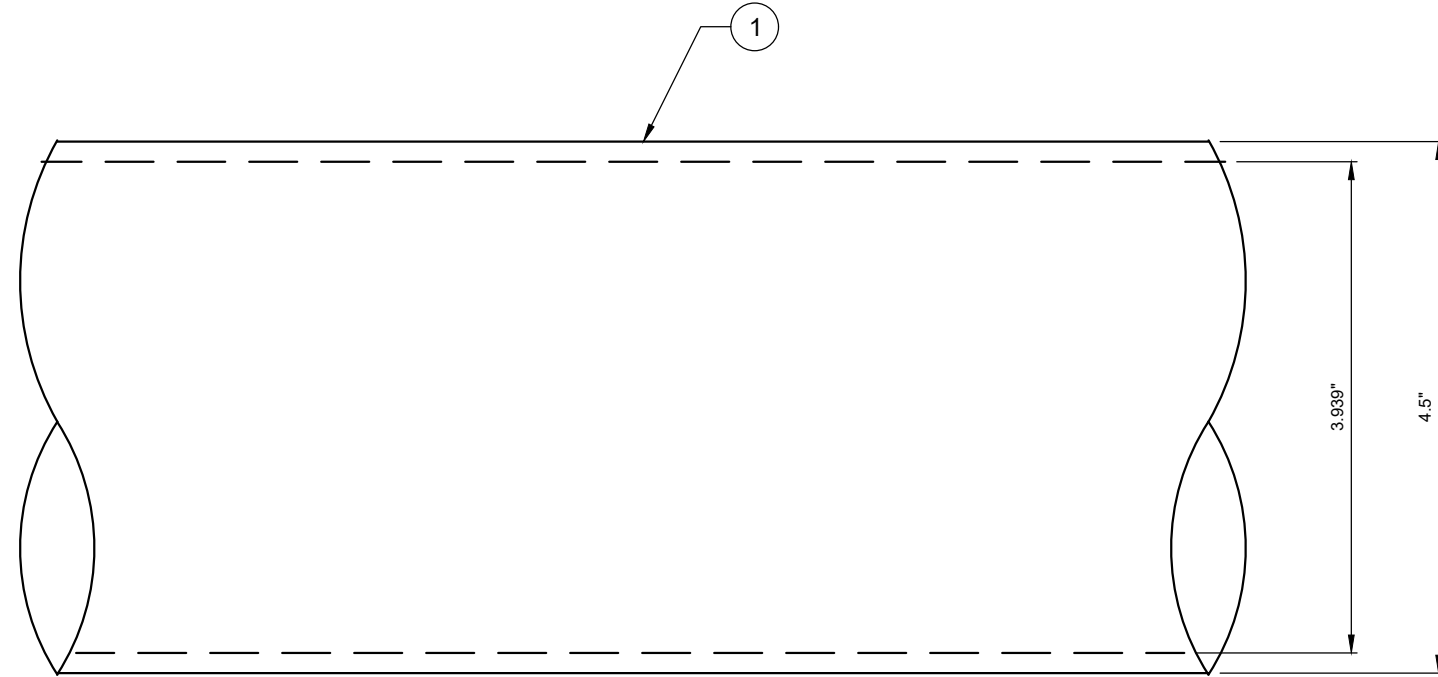
18JUN2019
CHK
DATE

PROJECT NO:
SYSTEM

SCALE:
NTS

SHEET NO:
C723

ELECTRONIC FILE LOCATION: I:\SVI\System Drawings\Work In Progress Drawings\Florida DOT Test 2017\1.75 External Grouted Bar System



NOTE: MINIMUM BEND RADIUS = 20'-0"

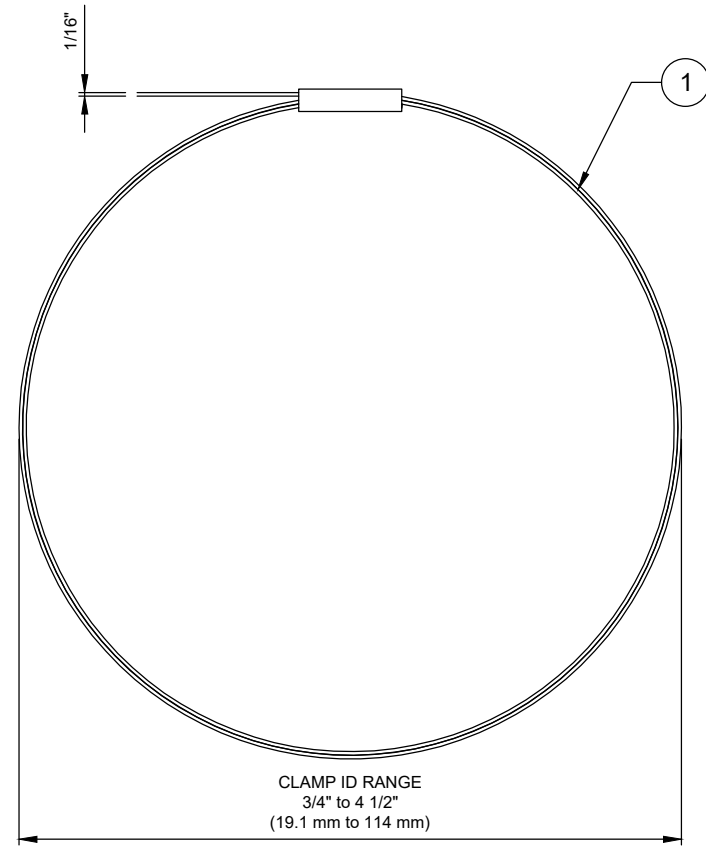
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ITEM	QTY	DESCRIPTION	MATERIAL
1	-	4" HDPE PIPE DR-17	ASTM D3035

PROJECT INFORMATION:		SYSTEM DRAWING	
		4" HDPE PIPE	
PROJECT NO:	SYSTEM	SCALE:	NTS
SHEET NO:			C732
		Dallas, TX / Washington DC / Denver, CO / Pompano Beach, FL STRUCTURAL TECHNOLOGIES, LLC CORPORATE OFFICE 10150 OLD COLUMBIA RD COLUMBIA, MD 21046 PHONE: (410) 850-7000 structuraltechnologies.com	
FIRST ISSUE NO		CDL ZX	13AUG2019
DESCRIPTION		BY	CHK
			DATE

ELECTRONIC FILE LOCATION: I:\VSL_System Drawings\Work In Progress Drawings\Florida DOT Test 2017\ECI 6-7 Flexible Filler Submittal



END VIEW



SIDE VIEW

NOTE: PER SPECIFICATION SECTION 960-2.2.1.5-12, THE BAND CLAMPS ARE TO BE SET WITH A 120# FORCE PRIOR TO CLAMPING THEM IN PLACE.

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ITEM	QTY	DESCRIPTION	MATERIAL	INVENTORY #
1	-	ELASTOMER SLEEVE BAND CLAMP	316 STAINLESS STEEL	02MP50048

PROJECT INFORMATION:

SYSTEM DRAWING

ELASTOMER BAND CLAMP

PROJECT NO:
SYSTEM

SCALE:
NTS

SHEET NO:

C760

structural TECHNOLOGIES

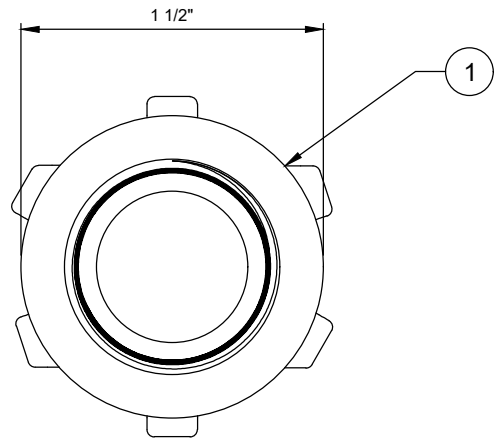
Dallas, TX / Washington DC / Denver, CO / Pompano Beach, FL

STRUCTURAL TECHNOLOGIES, LLC 10160 OLD COLUMBIA RD
CORPORATE OFFICE COLUMBIA, MD 21046

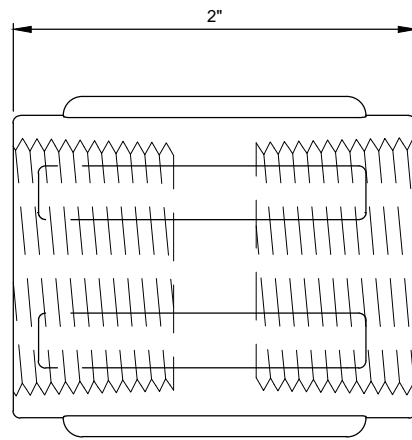
PHONE: (410) 850-7000
structuraltechnologies.com

NO	△	FIRST ISSUE	CDL	ZX	18JUN2019
		DESCRIPTION	BY	CHK	DATE

ELECTRONIC FILE LOCATION: I:\VSI_System Drawings\Work In Progress Drawings\Florida DOT_Test 2017\ECI 6-22_Grouted System



END VIEW



SIDE VIEW

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ITEM	QTY	DESCRIPTION	MATERIAL	INVENTORY #
1	-	3/4" NPT PP F/F COUPLER	SCH 80 POLYPROPYLENE	02DT01931

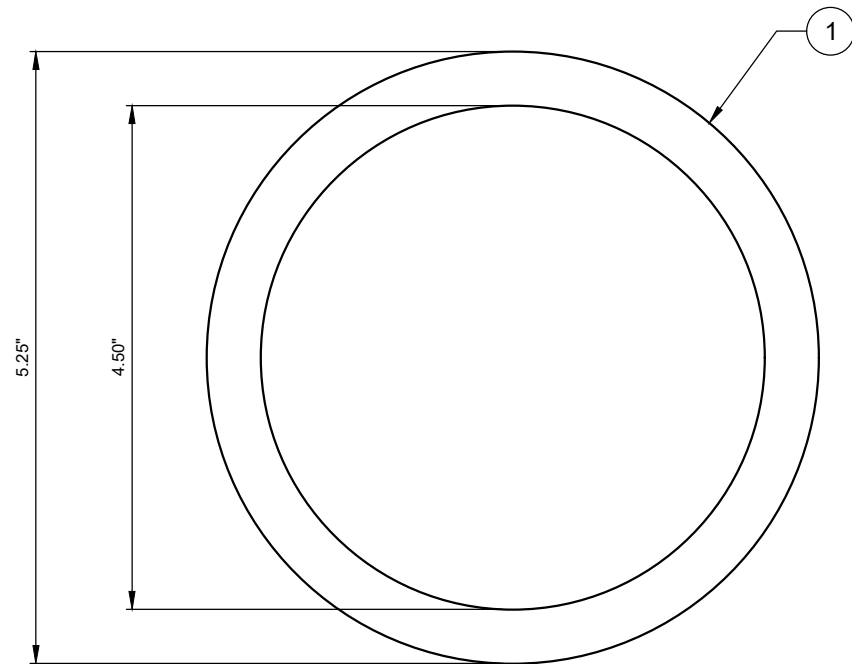
PROJECT INFORMATION:

PROJECT NO:	SYSTEM
SHEET NO:	NTS
TITLE:	3/4" NPT PP F/F COUPLER

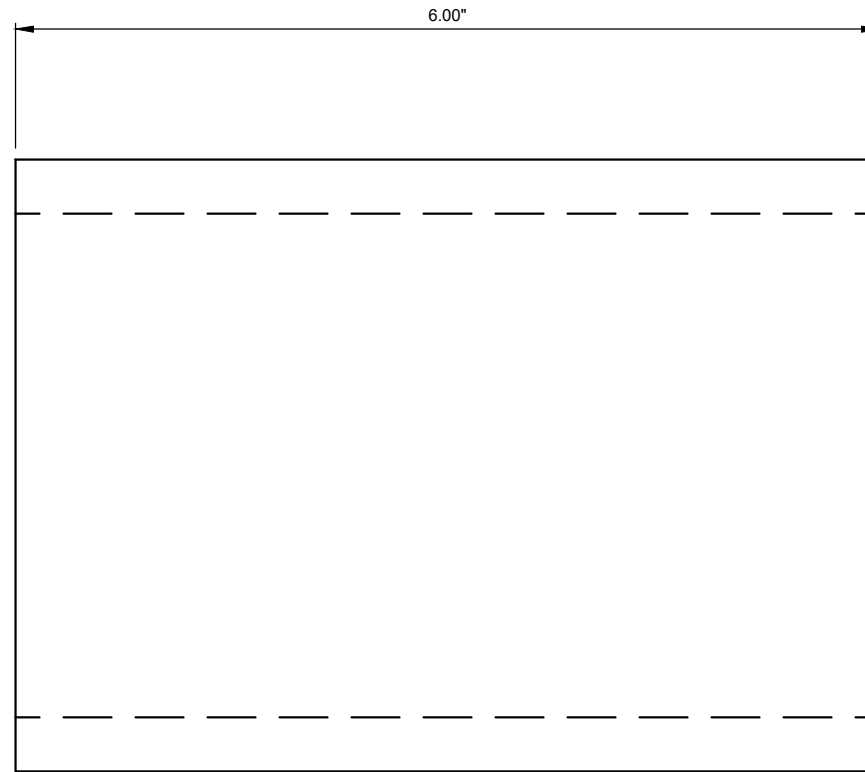
structural TECHNOLOGIES
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 CORPORATE OFFICE COLUMBIA, MD 21046
 PHONE: (410) 850-7000
 structuraltechnologies.com

NO	FIRST ISSUE	CDL ZK	18JUN2019
	DESCRIPTION	BY	CHK
			DATE

ELECTRONIC FILE LOCATION: I:\VSI_System Drawings\Work In Progress Drawings\Florida DOT_Test 2017\1.75 External Crouded Bar System



END VIEW



SIDE VIEW

NOTE: SLEEVE IS TO BE REINFORCED WITH A MINIMUM OF FOUR PLY POLYESTER REINFORCEMENT.

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ITEM	QTY	DESCRIPTION	MATERIAL	INVENTORY #
1	-	EPDM SLEEVE 4-1/2 ID X6"	COMPOSITE - ASTM D1171	02MP41206

PROJECT INFORMATION:

SYSTEM DRAWING

TITLE:
EPDM SLEEVE 4-1/2 ID X6"

PROJECT NO:
SYSTEM

SCALE:
NTS

SHEET NO:

C833

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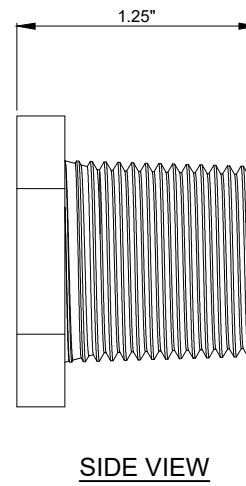
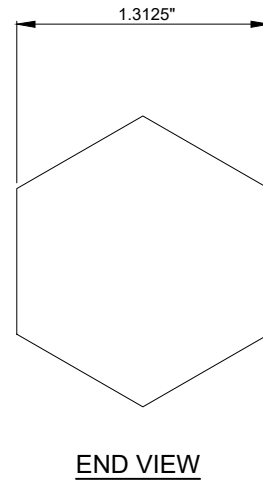
NO
FIRST ISSUE

DESCRIPTION

BY CDL ZK

CHK BY DATE
18JUN2019

ITEM	QTY	DESCRIPTION	MATERIAL	INVENTORY#
1	-	3/4" NPT PE PLUG	POLYETHYLENE	02DT01913



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PROJECT INFORMATION:

SYSTEM DRAWING

PROJECT NO:

SCALE:
NTS

SHEET NO:

C787

structural TECHNOLOGIES
A Structural Group Company
Dallas, TX / Washington, DC / Denver, CO / Pompano Beach, FL

STRUCTURAL TECHNOLOGIES, LLC
DALLAS OFFICE
15000 TRINITY BLVD, SUITE 118
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VSL

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FAX: (817) 545-4827
WWW.VSL.NET

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NO

FIRST ISSUE

DESCRIPTION

CDL

ZX

13JUN2018

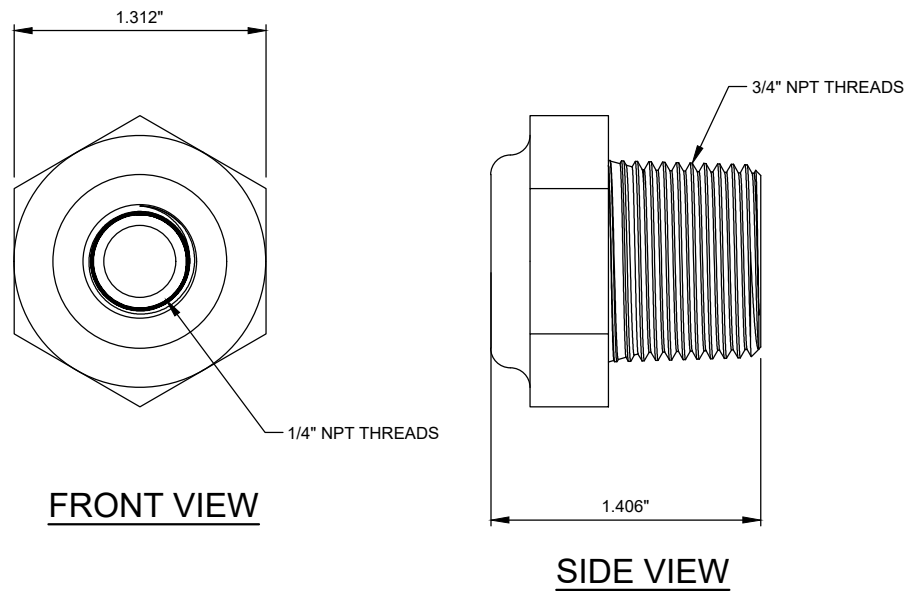
DATE

BY

CHK

DATE

ELECTRONIC FILE LOCATION: I:\SVS\System Drawings\Work In Progress Drawings\Florida DOT Test 2017\1.75 External Grouted Bar System



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ITEM	QTY	DESCRIPTION	MATERIAL	INVENTORY
1	-	1/4" NPT TO 3/4" NPT BUSHING	SCH 80 PVC	02DT01935

PROJECT INFORMATION:

SYSTEM DRAWING

1/4" NPT TO 3/4" NPT PVC BUSHING

PROJECT NO:
SYSTEM

SCALE:
NTS

SHEET NO:

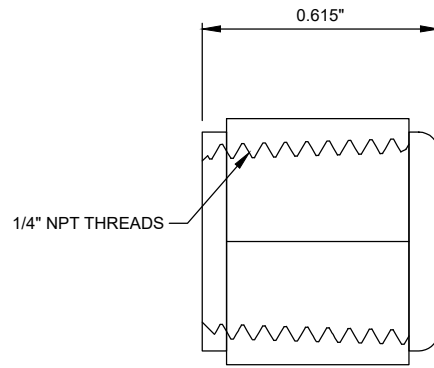
C857

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 structuraltechnologies.com

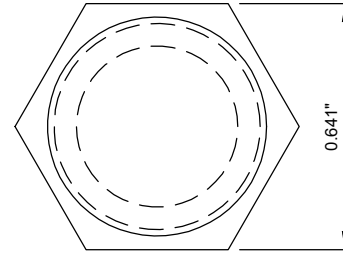
NO	NO	FIRST ISSUE	CDL ZX	14AUG2019
		DESCRIPTION	BY	CHK
				DATE

ELECTRONIC FILE LOCATION: I:\SVS\System Drawings\Work In Progress Drawings\Florida DOT Test 2017\1.75 External Grouted Bar System

ITEM	QTY	DESCRIPTION	MATERIAL	INVENTORY
1	-	1/4" NPT FEMALE HEX CAP	POLYPROPYLENE	02DT01907



SIDE VIEW



FRONT VIEW

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PROJECT INFORMATION:

SYSTEM DRAWING

1/4" NPT FEMALE HEX CAP

PROJECT NO:
SYSTEM

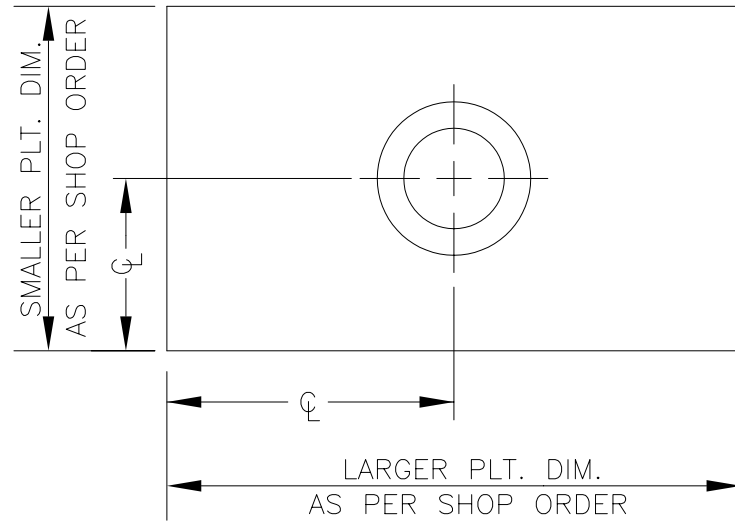
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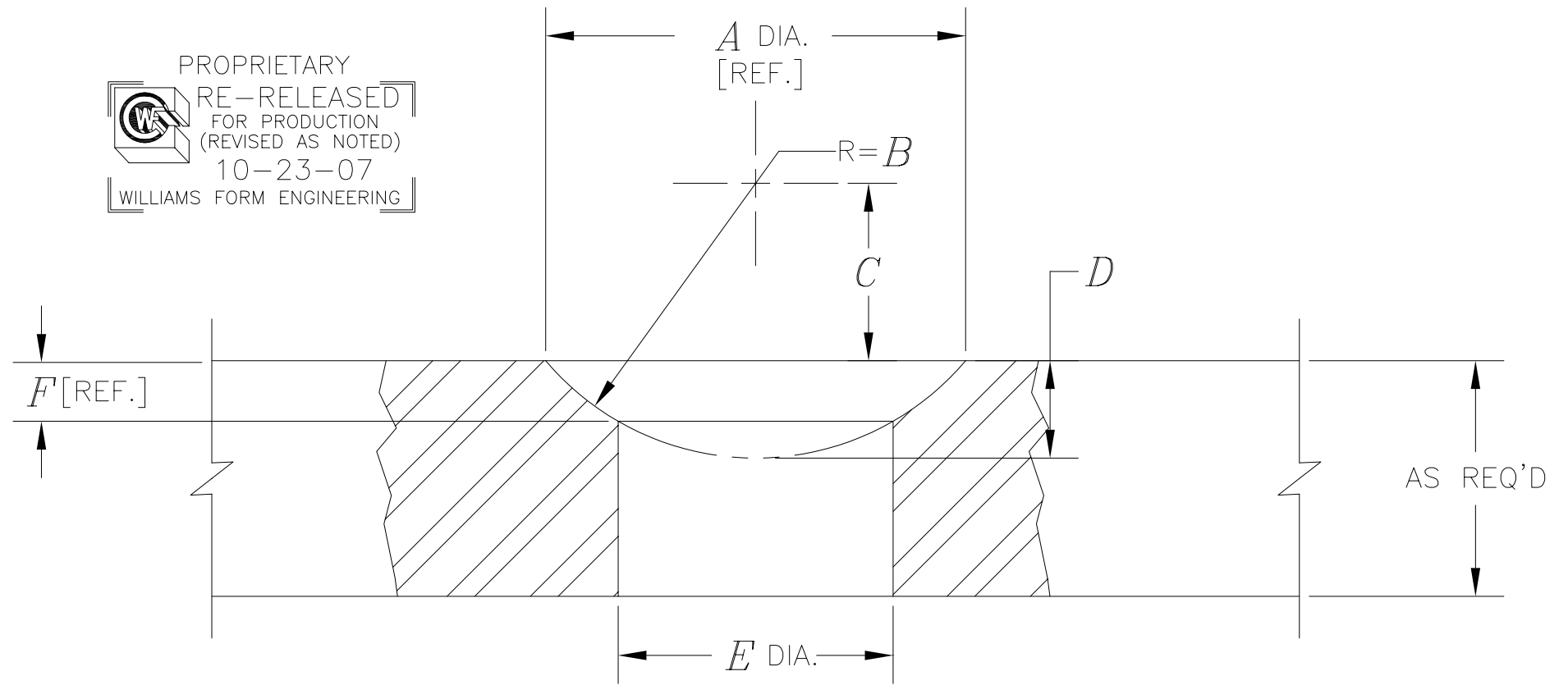
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structural TECHNOLOGIES
 Dallas, TX / Washington DC / Denver, CO / Pompano Beach, FL
 STRUCTURAL TECHNOLOGIES, LLC 15600 TRINITY BLVD., SUITE 118
 DALLAS OFFICE FORT WORTH, TX 76155
 PHONE: (817) 545-4807
 FAX: (817) 545-4827
 structuraltechnologies.com

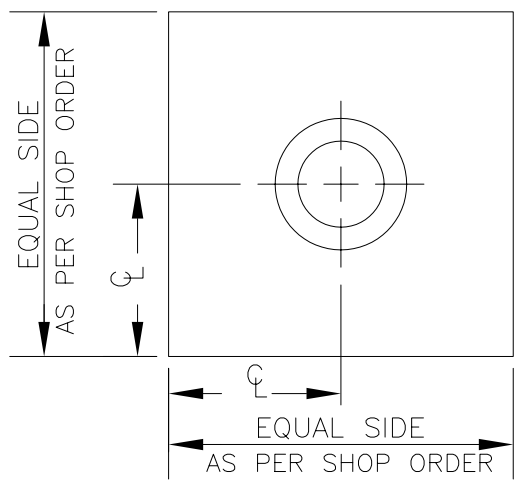
NO	NO	FIRST ISSUE	CDL ZX	14AUG2019
		DESCRIPTION	BY	CHK
				DATE



PROPRIETARY
 RE-RELEASED
 FOR PRODUCTION
 (REVISED AS NOTED)
 10-23-07
 WILLIAMS FORM ENGINEERING



C	10-23-07	CAC	ADDED 75mm DIM & MATR'L NOTE
B	11-18-03	CAC	REVISED FOR PRODUCTION
A	1-18-00	CAC	RELEASED TO CAD
REV	DATE	NAME	CHK. CHANGE DESCRIPTION



NOMINAL BAR SIZE (GR150)	A DIA.	B ^{±.010} RAD.	C DIM.	D DIM.	E DIA.	F DIM.
46mm (1 3/4" nom.)	3.64	2.19	1.22	.98	2.38	.63

NOTE: FOR ROUND PLATES AND PLATES WITH DUCT COLLARS, SINGLE OR ANGLED GROUT TUBE HOLES REQUEST PRINT FROM ENGINEERING DEPT.

TOLERANCES UNLESS OTHERWISE SPECIFIED
 .XX, +/- .03, .XXX +/- .015
 ANGLES +/- 0° - 30'

X:\TOP PART PRINTS\SK1 PLATES\410129 B.dwg, 10/23/2007 11:43:49 AM

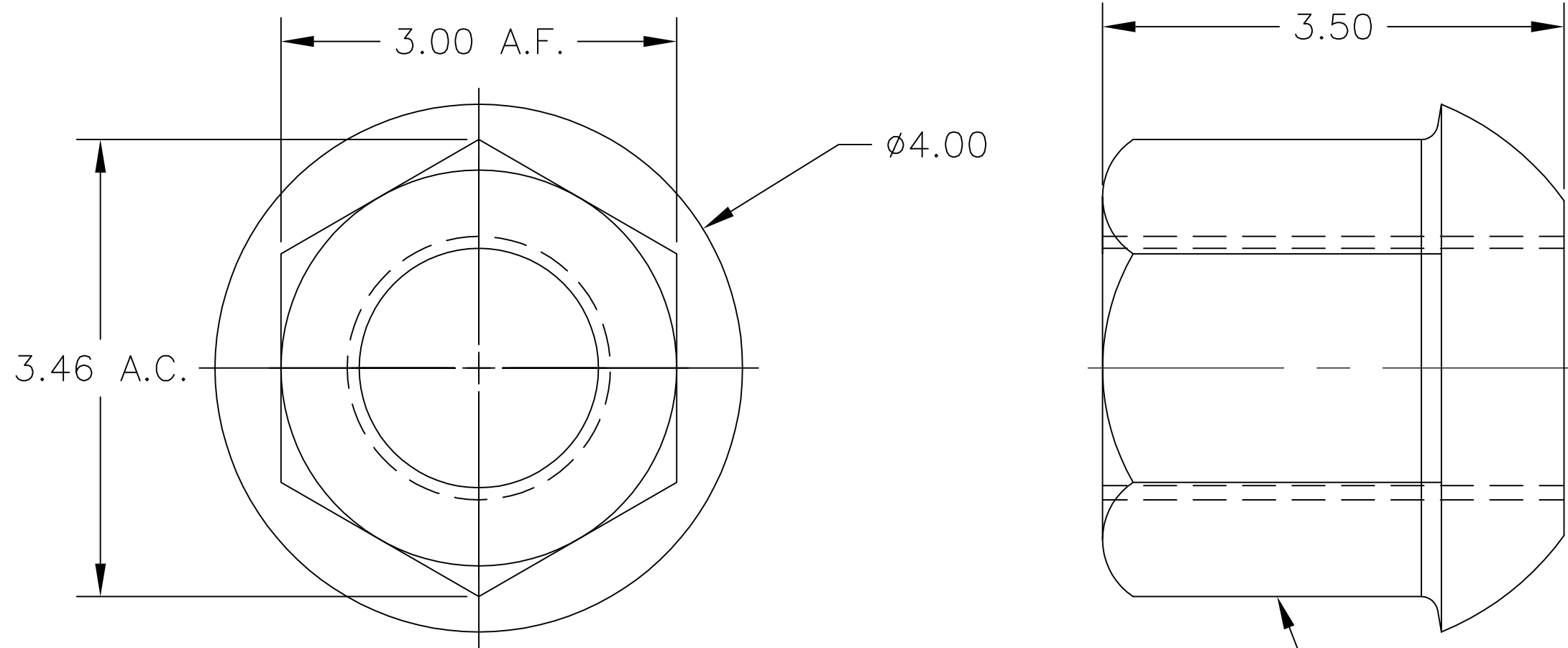
WILLIAMS
 FORM ENGINEERING CORP.
<http://www.williamsform.com>
 280 ANN ST. N.W., GRAND RAPIDS, MI 49504, PH: 616.365.9220 - FX: 616.365.2668

Customer: _____
 Project: MASTER CHART OF DISHED PLATES FOR GR150 BARS

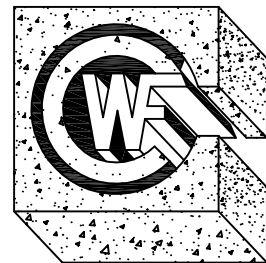
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DESIGNED BY:	
TECH REP:	

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PRINT NO.: 1B-FK-5-129
 REV: C



WMS. 46mm (1 3/4" nom.) SPHERICAL HEX NUT:
 ASTM A-536, 100-70-03, DUCTILE IRON



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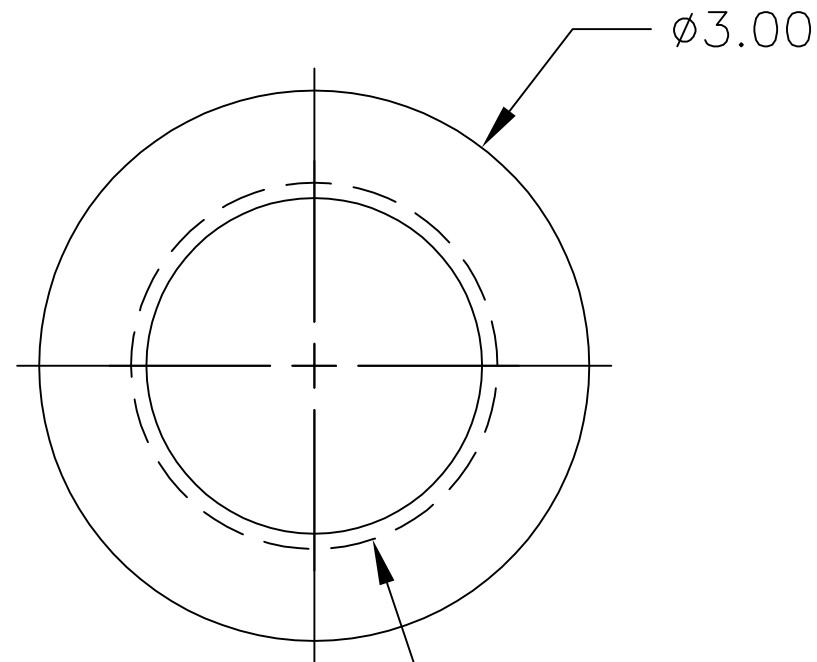
8165 GRAPHIC DR, BELMONT, MI 49306, PH: 616.866.0815 - FX: 616.8661890

Customer: VSL
 Project: WMS. 46mm (1 3/4" nom.) GR150 DOMED HEX NUT
150 KSI 1-3/4" DOMED HEX NUT

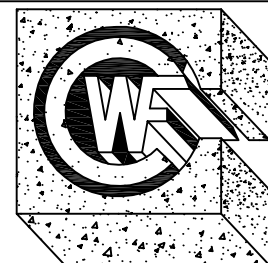
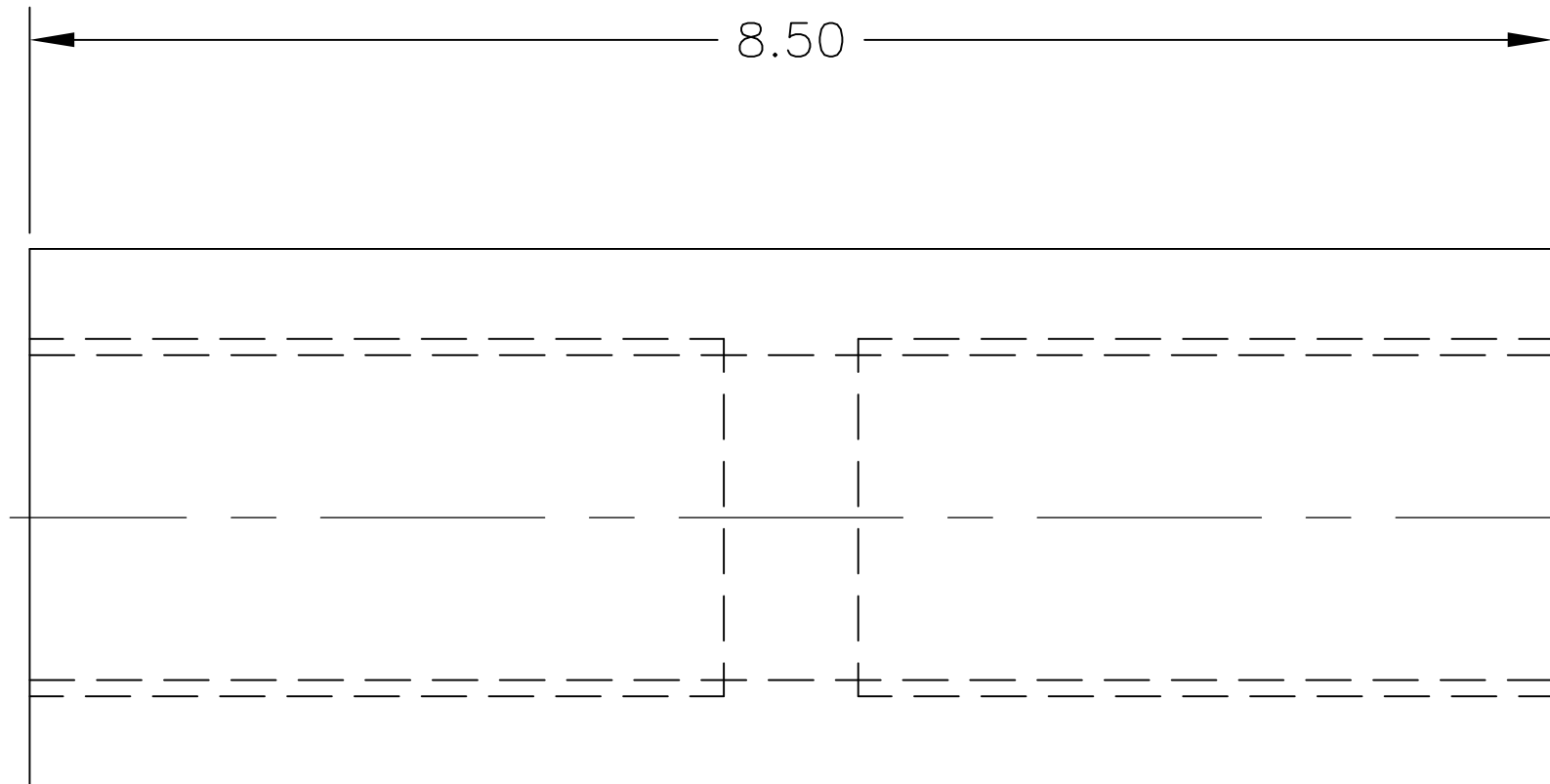
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SCALE: FULL		C/O: -----
DATE: 9-20-11		APPRO BY:
SHEET NO.	TOTAL SHEETS	DESIGNED BY:
2	9	TECH REP: JAW

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1B-R7P-003-2	-



TAP 1 3/4" - 3 1/2 COIL
GR150



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<http://www.williamsform.com>

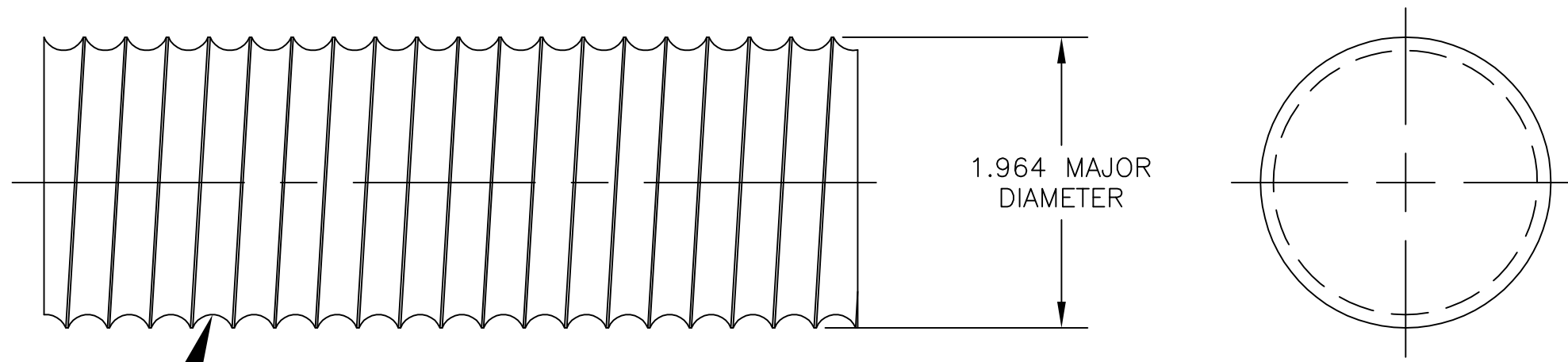
8165 GRAPHIC DR, BELMONT, MI 49306, PH: 616.866.0815 - FX: 616.8661890

Customer: VSL
Project: WMS. 46mm (1 3/4" nom.) GR150 STOP TYPE COUPLING

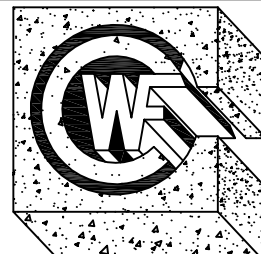
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SHEET NO.	TOTAL SHEETS	DESIGNED BY:
5	9	TECH REP: JAW

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PRINT NO.:	REV:
1B-R7P-003-5	-



WMS. 46mm (1 3/4" nom.) GRADE 150 KSI TYPE II, ALL-THREAD-BAR,
 ASTM A-722, AASHTO M275.



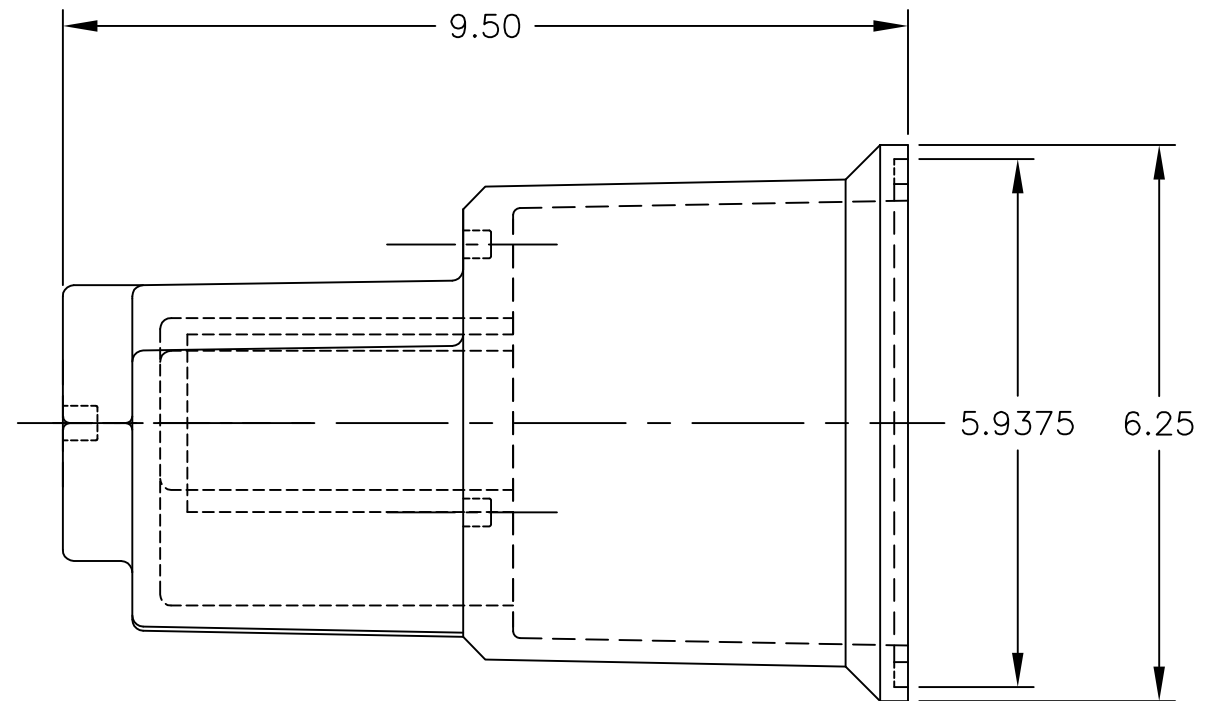
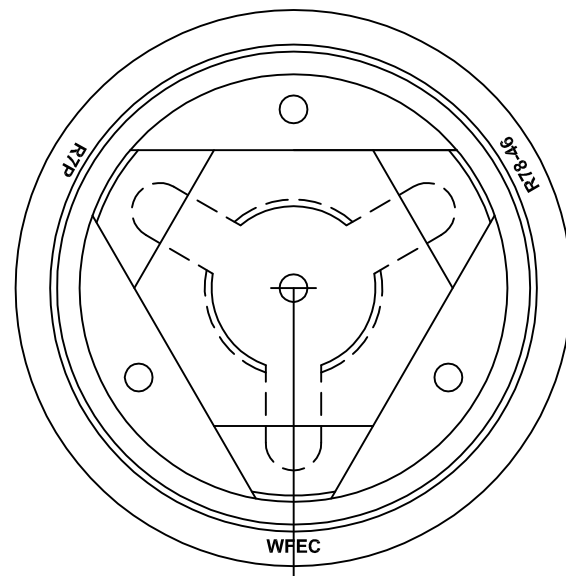
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FORM ENGINEERING CORP.
<http://www.williamsform.com>
 8165 GRAPHIC DR, BELMONT, MI 49306, PH: 616.866.0815 - FX: 616.8661890

Customer: VSL
 Project: WMS. 46mm (1 3/4" nom.) GR150 ALL-THREAD-BAR

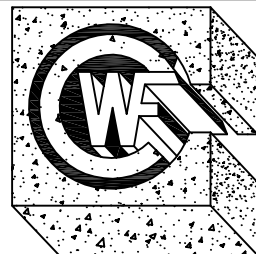
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SHEET NO.	TOTAL SHEETS	DESIGNED BY:
6	9	TECH REP: JAW

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PRINT NO.: **1B-R7P-003-6** REV: —



MATERIAL: NYLON 6, FIBERGLASS REINFORCED PER ASTM D-4066, SPA0221 AND D-5989, SPA0231



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<http://www.williamsform.com>

8165 GRAPHIC DR, BELMONT, MI 49306, PH: 616.866.0815 - FX: 616.8661890

Customer: VSL
 Project: WMS. NYLON REINFORCED END CAP FOR 46mm GR150 KSI BAR

DRAWN BY: KRH		ECO NO.: 410-9241
SCALE: 1/2		C/O: -----
DATE: 9-20-11		APPRO BY:
SHEET NO.	TOTAL SHEETS	DESIGNED BY:
7	9	TECH REP: JAW

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1B-R7P-003-7	-