CAUTION

ITEM

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

PART #

27-01-00

27-01-01

27-01-02

00-01-03

00-01-04

00-01-05

I-27-02-00

27-03-00

00-03-01

00-03-02

00-03-03

00-04-00

27-05-00

27-06-00

27-06-01

I-27-07-00

I-27-07-01

I-27-07-02 00-07-03

00-07-04-P

00-07-05

00-07-08

27-07-06

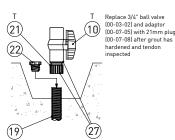
00-08-00

27-07-07

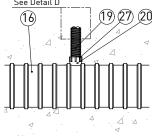
00-09-00

Assembly of anchorage and installation of tendons shall only be performed by qualified post-tensioning specialist personnel.

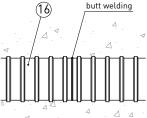
This installation procedure is generic: follow the specific procedure for each project and the FDoT specifications.



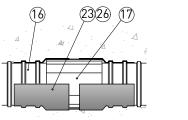




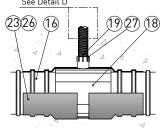
w/ welded grout port



butt welded

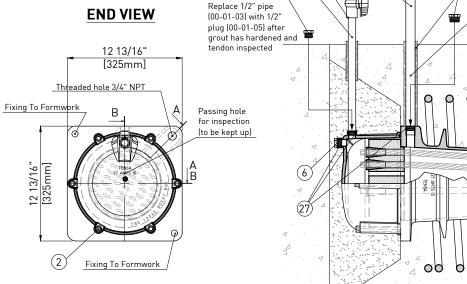


w/ coupler



w/ coupler and grout port

foam insulation (6) (4) (27) (5) (9) (27)Fill hole with non-shrink grout after



SECTION B-B

top injection and venting

DESCRIPTION

Protection Cap

Protection Cap Bolts

Protection Cap O-Ring

NPT Pipe Nipple 1/2"

NPT Ball Valve 1/2"

NPT Pipe Nipple 3/4'

NPT Ball Valve 3/4"

Compression Seal

Duct Coupler w/ Vent 4.50"

NPT Plug 1/2"

Wedge Plate

NPT Plug 3/4"

Wedges

Trumpet

Duct 4.50" Duct Coupler 4.50"

Hose 21mm

21mm Plug

Strand 0.6'

Vent Port 21mm PP

Adaptor 21mm-3/4"

Heat Shrink Sleeve

Heat Shrink Wran

Duct Coupler 4.50" stepless

Spiral

Anchor

BILL OF MATERIALS

SCH80 PVC or SCH40 steel

Steel AISI C1045 Normalized

SCH80 PVC or SCH40 steel

PVC 150 psi rated

PVC 150 psi rated

Nylon S-PA0401 - according to ASTM D5989

Stainless Steel GR316L - according to ASTM F593

High Density Polyethylene - according to ASTM D3350

Coated Polyolefin Backing - according to FDoT Tab.2.2.1.8-1 Sec.960

Coated Polyolefin Backing - according to FDoT Tab.2.2.1.8-1 Sec.960

NBR - according to FDoT Tab.2.2.1.7-1 Sec.960

Steel GR60, #6 - according to ASTM A615

Polypropylene - according to ASTM D4101

Polypropylene - according to ASTM D4101

Polypropylene - according to ASTM D4101

Polyethylene - according to ASTM D3350

Polypropylene - according to ASTM D4101

Polypropylene - according to ASTM D4101

Steel GR270 - according to ASTM A416

Polypropylene - according to ASTM D4101

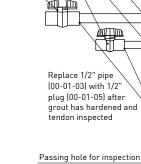
Steel AISI 12L14 - according to ASTM A108 + Heat treatment

NBR - according to FDoT Tab.2.2.1.7-1 Sec.960

MATERIAL

Ductil Iron ASTM A536 GR80-55-06 + Galvanization according to ASTM A123

grout has hardened and foam insulation (by others) has been removed Replace 3/4" pipe (00-03-01) with 3/4" plug (00-03-03) after grout has ardened and tendon inspected (5)(4)(9)(6)(7)(10)



plug (00-01-05) after grout has hardened and

ân

1'3/8' (2) [35mm]

6 9/16"

[167mm]

(3

9 13/16" 20 15/16" [250mm] [532mm]

0 lø)

SECTION A-A

front injection and venting

- Components marked with "T" on the drawing are temporary;
- Port and hose assembly may be oriented in any required direction to create a vent or a drain.
- Epoxy grout shall be used to fill recessess: make reference to FDoT standard plans index 462-003 for post-tensioning anchorage and tendon
- Concrete cover must meet FDoT Structures Design Guidelines Section

	MISCELLANEOUS MATERIALS
ITEM	DESCRIPTION
27	Commercially available thread seal tape
28	Commercially available and compatible silicone grease

	SPIRAL	
CONCRETE CLASS	4000PSI [27.5MPA]	6500 PSI [45MPA]
LENGTH (L)	25-1/2" [649mm]	20-7/8" [529mm]
DIAMETER (D)	18-7/8" [481mm]	15" [381mm]
PITCH (P)	2-3/8" [60mm]	
BAR DIAMETER	#6 - 3/4" [19mm]	
N. OF TURNS	12	10

INTERMEDIATE COUPLING DETAILS

see installation procedures



3.45/16"

[100mm]

·6.

Ρ

bundle into duct. Allow sufficient extra length at the active anchorage for stressing. The strand threading can be completed before or after the concrete is poured. 8. Check the wedge plate (WP) for rust and dirt, clean wedge

1. Preassemble anchor (AN) and plastic trumpet (PT), (some

silicone grease shall be used to facilitate the threading

2. Bolt the assembled AN to the pocket former using the two threaded holes located on the front surface of AN. AN shall be placed perpendicular to the tendon's axis and

3. The position of the spiral rebar (SR) shall be secured to the AN or to adjacent rebar by tack-welding or proper fixing. The SR shall be rotated such that it won't interfere with 3/4" NPT nine attachment (if using side grout hole)

Align axis of SR with AN. Seal unused port in AN.

4. Install the duct as shown on shop drawings and insert it into PT and seal it with duct by heat shrink sleeve (or, if

not possible, with heat shrink wrap) in order to prevent

and the compression of the gasket).

concrete from penetrating. 5. Carry out the pressure test.

rotated such as the side grout hole points up.

- holes with wire brush if necessary. Lightly grease or oil wedge holes.
- 9. Check wedges for rust. Discard rusty wedges and use only
- 10. Install wedge plate (keeping up the inspection hole), slip the wedges over the strands and securely place them into wedge holes.
- 11. Do not apply post-tensioning forces until the concrete mean compressive strength f'_{ci} is not less than the values shown on the spiral table. These values refer to cylindrical strength.

Stressing can now proceed.

(!) Appropriate clearance must be kept behind the hydraulic

- 12. Stressing operation shall be executed according to the engineer form and requires the simultaneous reading of pressure and elongation. Check the conformity of the final elongations measurement with prescribed values.
- 13. Install the protection cap (PC) with 0-ring sealing on AN using six bolts (some silicone grease shall be used to facilitate the compression of the O-ring).
- 14. Thread $\frac{1}{2}$ " NPT pipe for grout onto the PC and the $\frac{3}{4}$ " NPT pipe for grout onto AN. Use a 1/2" plug to secure the hole on PC not used. (Some thread seal tape shall be used to improve the tightness of the threadings).
- 15. Carry out the pressure test.

Grouting can now proceed.

- 16. Grout shall be injected through the filler inlet until it escapes from the filler outlet. Special measures shall be applied for long tendons, for tendon paths with distinct high points or inclined tendons to avoid voids.
- 17. All vents and grouting inlets/outlets have to be sealed with plugs soon after grouting.
- 18. Fill holes with non-shrink grout after post grouting operation and inspection are completed.

0 12/12/18 First issue L.C. T.C. Description Rev. Date Drawn Checked Material

DETAIL C



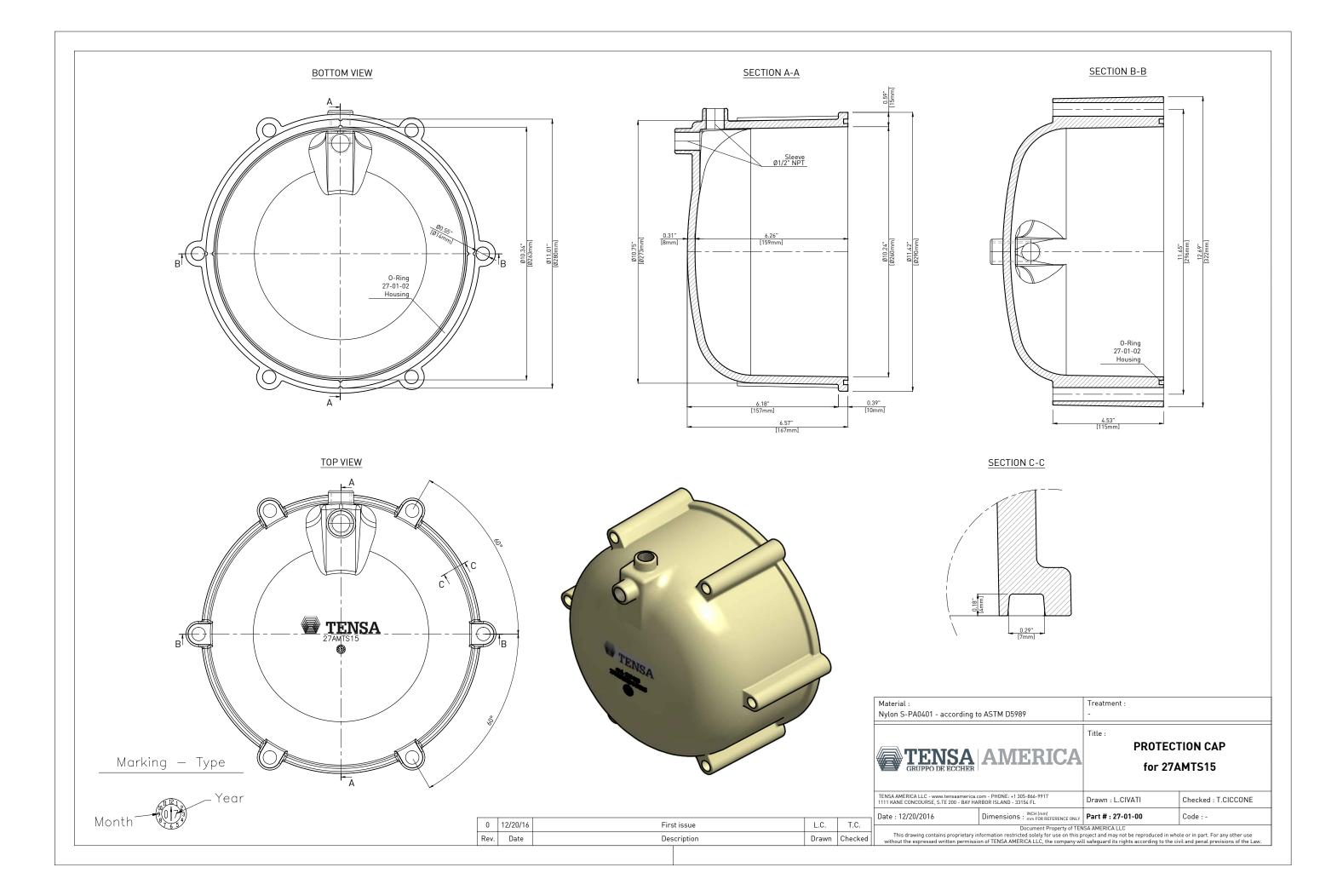
23(26) (25)

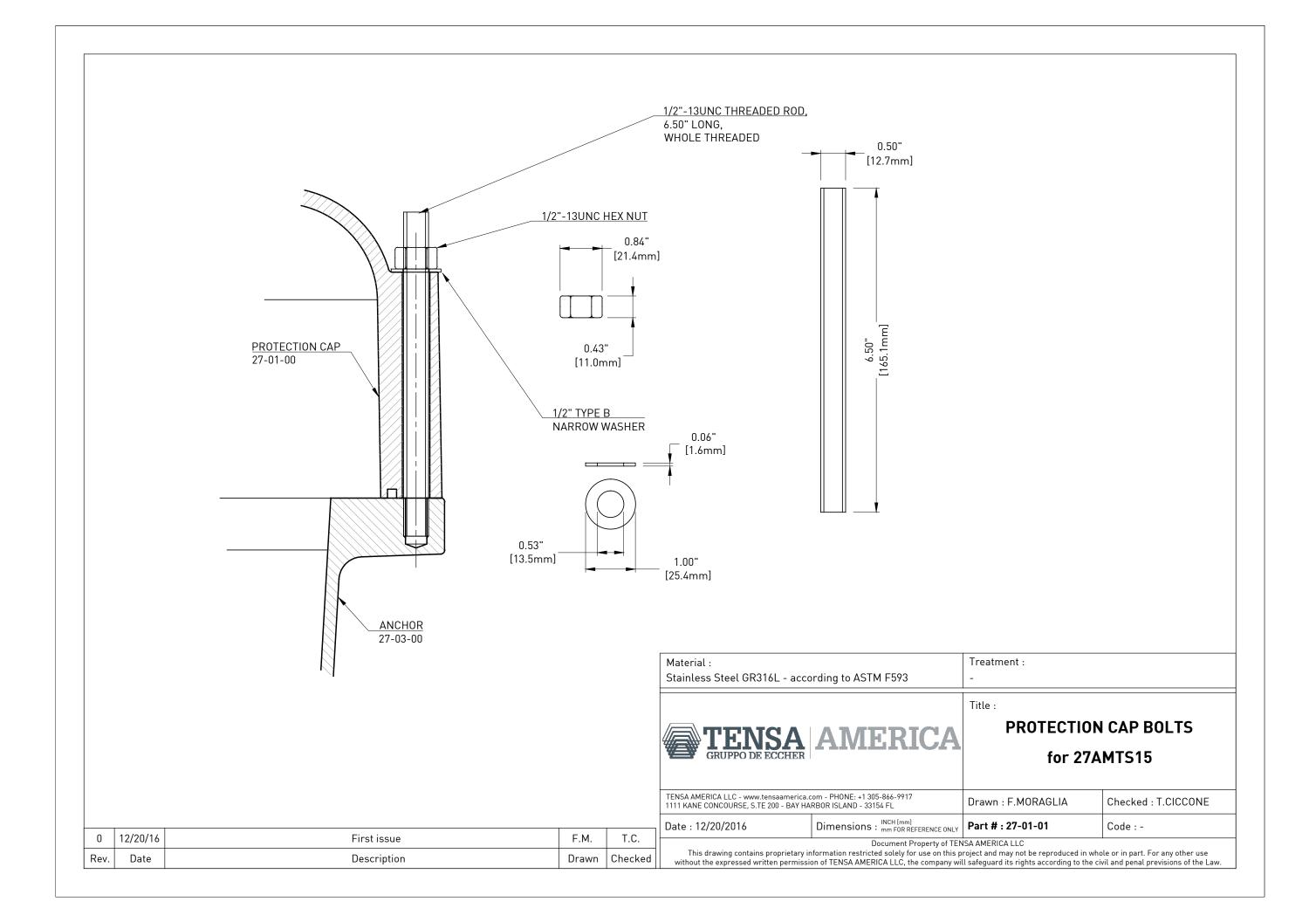
INTERNAL PT SYSTEM ASSEMBLY for

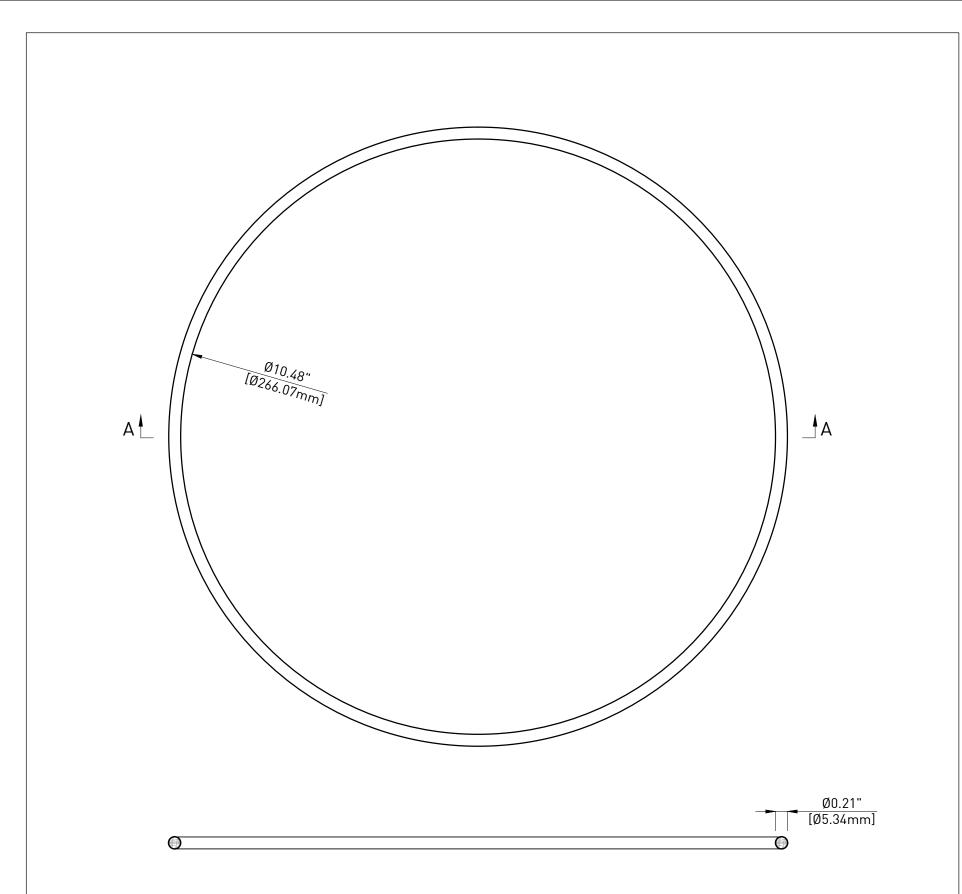
27AMTS15 (27-0.6") TENSA AMERICA LLC - www.tensaamerica.com - PHONE: +1 305-866-9917 1111 KANE CONCOURSE, S.TE 200 - BAY HARBOR ISLAND - 33154 FL Drawn : L.CIVATI Checked: T.CICCONE Dimensions: MRCH [mm] Part #: I-27-00-00 Date: 12/12/2018 Code : -

Document Property of TENSA AMERICA LLC

nformation restricted solely for use on this project and may not be reproduced in whole or in part. For any other use ion of TENSA AMERICA LLC, the company will safeguard its rights according to the civil and penal previsions of the Law.







SECTION A-A

0	12/20/16	First issue	L.C.	T.C.
Rev.	Date	Description	Drawn	Checked
Mate	Material : Treatment :			

NOTE:

This drawing is not intended for manufacturing purposes.

NBR - according to FDoT Tab. 2.2.1.7-1 Sec.960

Centro Guarnizioni TIGER s.r.l **PROTECTION CAP 0-RING**

for 27AMTS15 PT SYSTEM

TENSA AMERICA LLC - www.tensaamerica.com - PHONE: +1 305-866-9917 1111 KANE CONCOURSE, S.TE 200 - BAY HARBOR ISLAND - 33154 FL

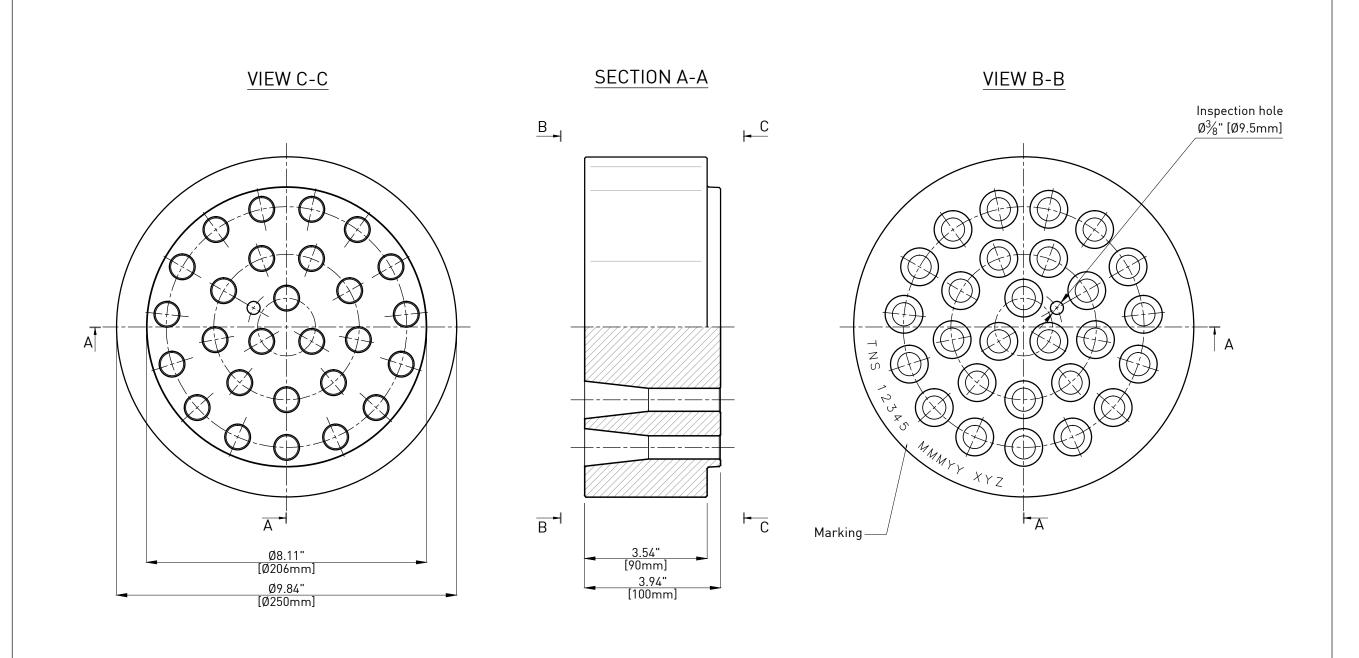
 ${\sf Drawn}: {\sf L.CIVATI}$

Checked: T.CICCONE

Code : OR 061050

Dimensions : INCH [mm] mm FOR REFERENCE ONLY Date: 12/20/2016 Part # : 27-01-02

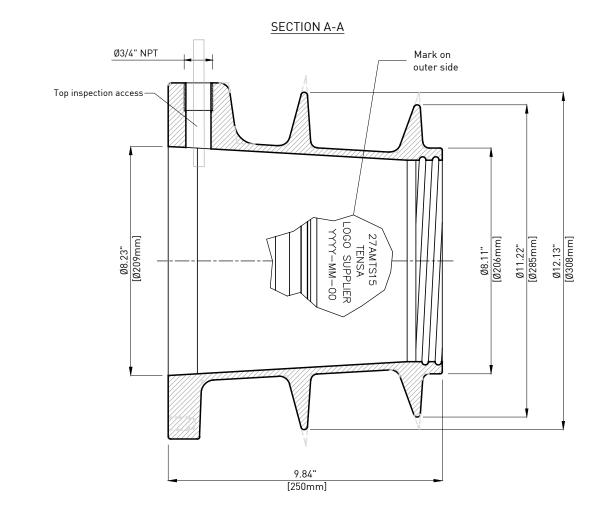
Document Property of TENSA AMERICA LLC

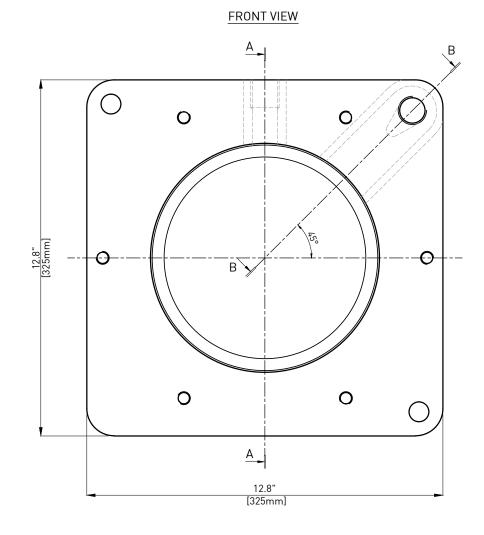


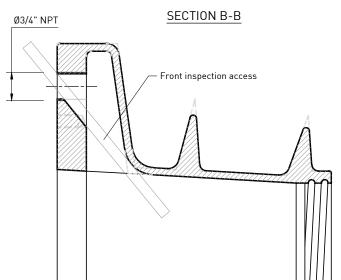
	Material : Steel AISI C1045 Normalized		Treatment :	
	TENSA AMERICA		WEDGE PLATE for 27AMTS15 (27-06") Internal Bonded System	
	TENSA AMERICA LLC - www.tensaamerica.c 1111 KANE CONCOURSE, S.TE 200 - BAY HA		Drawn : F.MORAGLIA	Checked : T.CICCONE
1	Date : 12/20/2016	Dimensions : INCH [mm] mm FOR REFERENCE ONLY	Part # : I-27-02-00	Code : -
	This drawing contains proprietary in	Document Property of TEN formation restricted solely for use on this p		ole or in part. For any other use

 0
 12/20/16
 First issue
 F.M.
 T.C.

 Rev.
 Date
 Description
 Drawn
 Checked







0	12/20/16	First issue	F.M.	T.C.
Rev.	Date	Description	Drawn	Checked

Material :
Ductil Iron ASTM A536 GR80-55-06

Treatment :
Galvanization according to ASTM A123

Title :



ANCHOR 27AMTS15 (27-0.6")

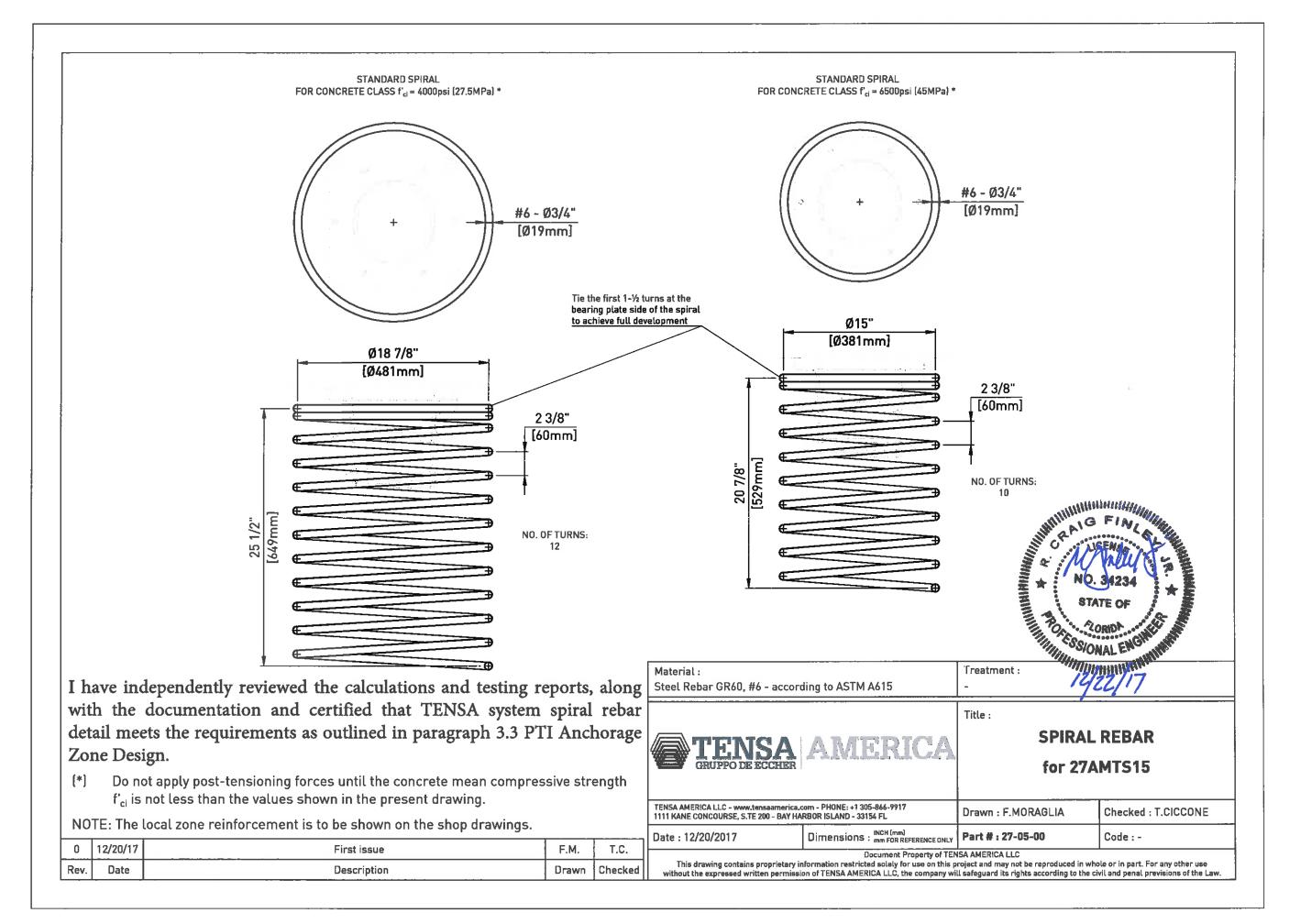
TENSA AMERICA LLC - www.tensaamerica.com - PHONE: +1 305-866-9917
1111 KANE CONCOURSE, S.TE 200 - BAY HARBOR ISLAND - 33154 FL

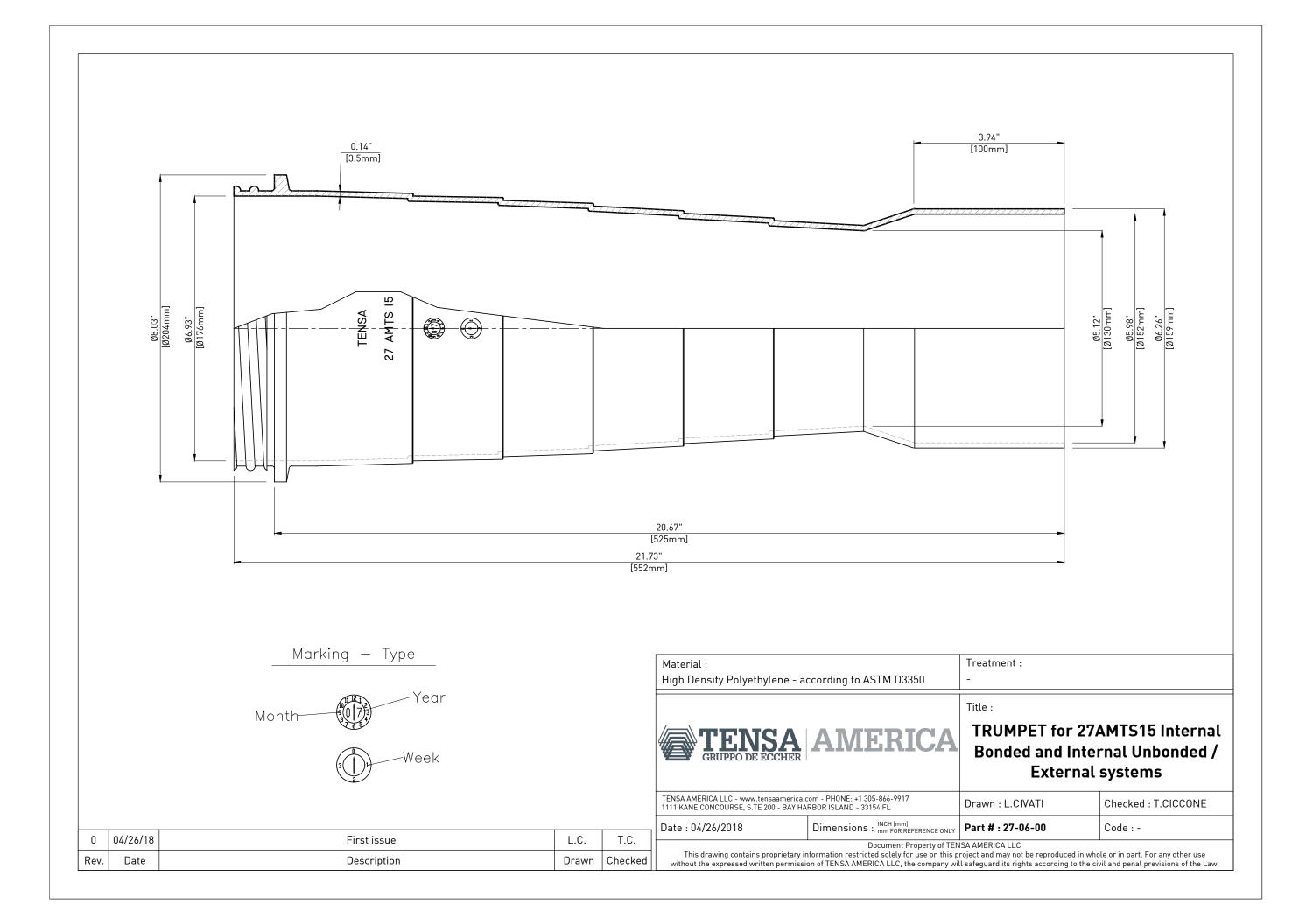
Date: 12/20/2016

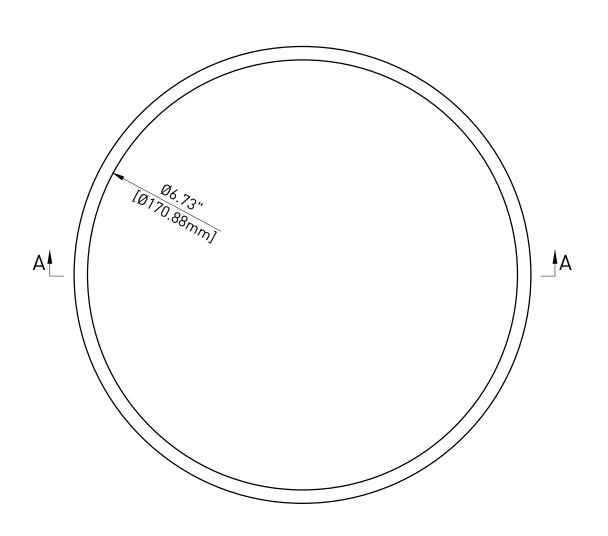
Dimensions: INCH [mm] | Part #: 27-03-00

Code: -

Document Property of TENSA AMERICA LLC







SECTION A-A

0	08/23/16	First issue	L.C.	T.C.
Rev.	Date	Description	Drawn	Checked
Mate	Material: Treatment:			

NBR - according to FDoT Tab. 2.2.1.7-1 Sec.960

Drawn : L.CIVATI

Ø0.21" [Ø5.34mm]

NOTE:

This drawing is not intended for manufacturing purposes.

Title : Centro Guarnizioni TIGER s.r.l **COMPRESSION SEAL** for 27AMTS15 between Anchor and Trumpet

TENSA AMERICA LLC - www.tensaamerica.com - PHONE: +1 305-866-9917 1111 KANE CONCOURSE, S.TE 200 - BAY HARBOR ISLAND - 33154 FL

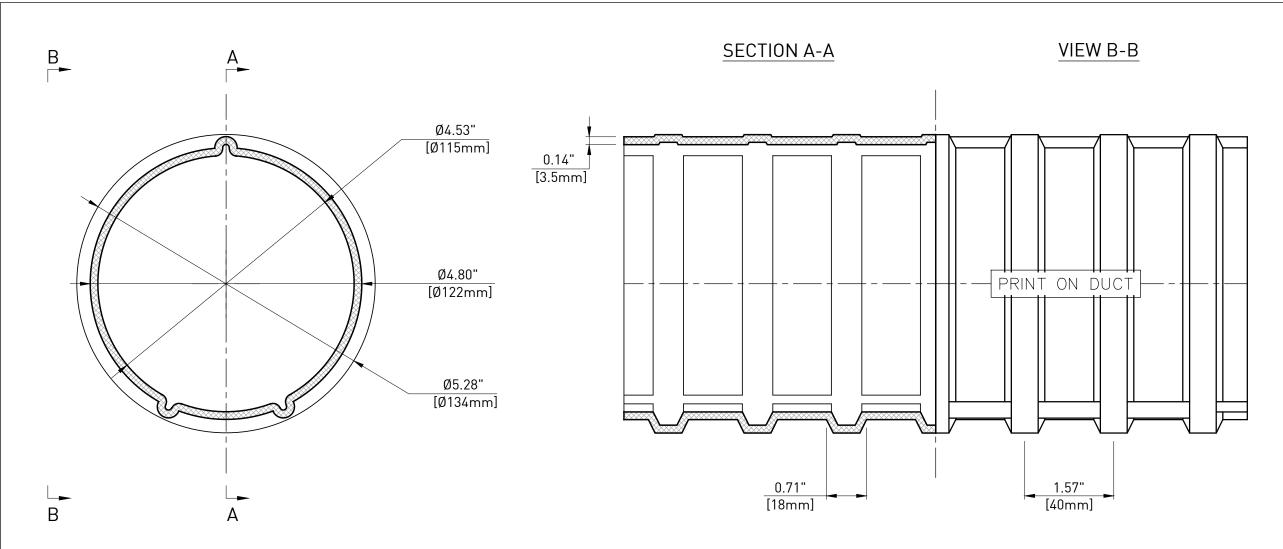
Date: 08/23/2016

Dimensions : INCH [mm] mm FOR REFERENCE ONLY

Part #: 27-06-01 Code : OR 06670

Checked: T.CICCONE

Document Property of TENSA AMERICA LLC



Minimum radii of curvature determined as per FIB Bulletin 75, Annex A8						
Strands Nr.	23	24	25	26	27	
Minimum radius [ft (m)]	25.03 (7.63)	25.75 (7.85)	26.48 (8.07)	27.23 (8.30)	27.95 (8.52)	

PRINT ON DUCT:

"GTI GENERAL TECHNOLOGIES, INC. STAFFORD, TEXAS ____ U.S. & FOREIGN PATENTS P.N. 220460 115mm"

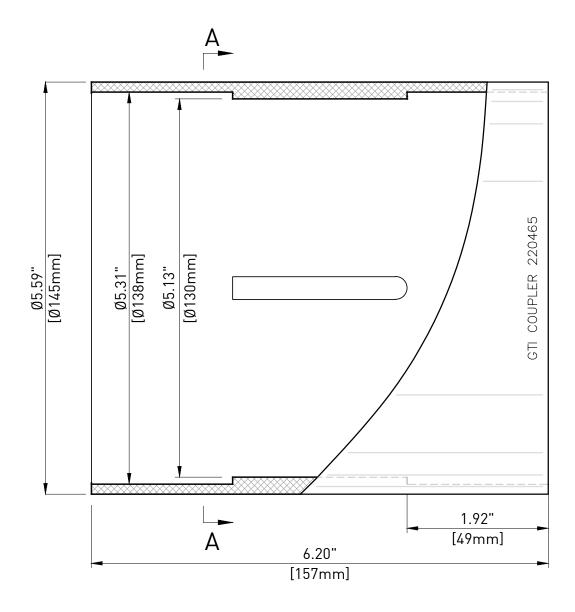
NOTE:

- All dimensions are measured;
- This drawing is not intended for manufacturing purposes;
- Duct is delivered in straight sections and is not intended to be coiled;
- Duct meets FDoT requirements in terms of Minimum Wall Thickness (Table 2.2.1.1-1 Section 960).

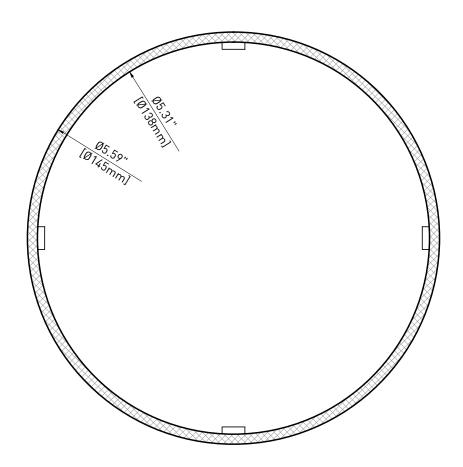
0	12/12/18	First issue	F.M.	T.C.
Rev.	Date	Description	Drawn	Checked

Material : Polypropylene - according to	ASTM D4101	Treatment :	
TENSA GRUPPO DE ECCHER	AMERICA	for Internal	4.50" (115mm) Bonded System t for 27AMTS15
TENSA AMERICA LLC - www.tensaamerica. 1111 KANE CONCOURSE, S.TE 200 - BAY HA		Drawn : F.MORAGLIA	Checked : T.CICCONE
Date : 12/12/2018	Dimensions : INCH [mm] mm FOR REFERENCE ONLY	Part # : I-27-07-00	Code : 220460
	Document Property of TEN nformation restricted solely for use on this p on of TENSA AMERICA LLC, the company wil	roject and may not be reproduced in	

SECTION/ELEVATION



SECTION A-A



NOTE:

- This drawing is not intended for manufacturing purposes;
- Coupler meets or exceeds FDoT requirements (Section 960-2.2.1.5 and 2.4.4);
- Standard fit for 4.50" [115mm] corrugated plastic duct

0	12/20/16	First issue	L.C.	T.C.
Rev	. Date	Description	Drawn	Checked

Material :
Polypropylene - according to ASTM D4101

Title :

GTI SLIP-ON COUPLER

Treatment:



for Internal Bonded System
Standard fit for 27AMTS15

TENSA AMERICA LLC - www.tensaamerica.com - PHONE: +1 305-866-9917 1111 KANE CONCOURSE, S.TE 200 - BAY HARBOR ISLAND - 33154 FL

Drawn : L.CIVATI

Checked : T.CICCONE

Date : 12/20/2016

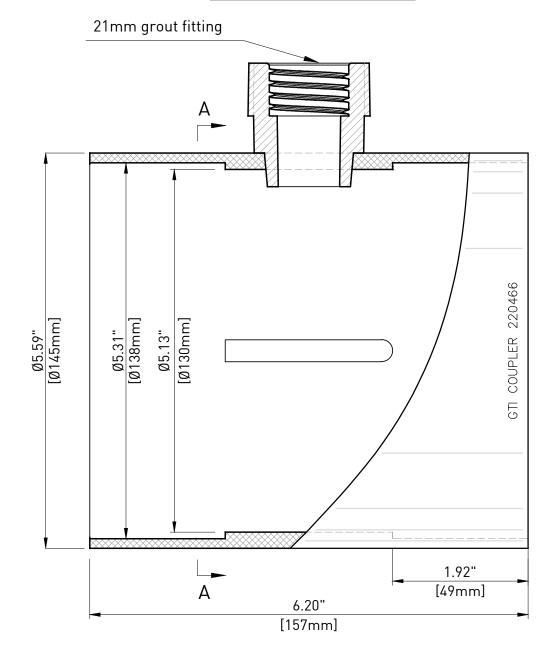
Dimensions : INCH [mm] mm FOR REFERENCE ONLY

Part # : I-27-07-01

Code : 220465

Document Property of TENSA AMERICA LLC

SECTION/ELEVATION

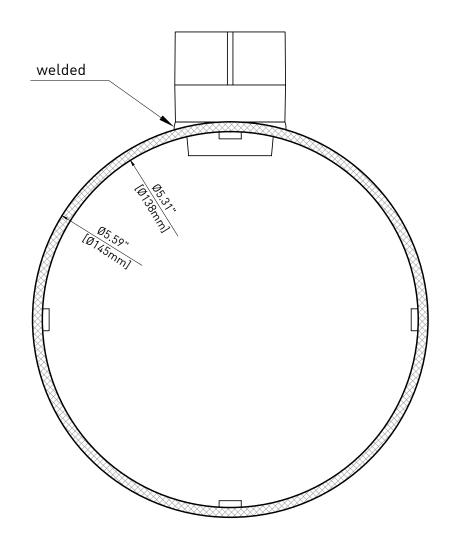


NOTE:

- This drawing is not intended for manufacturing purposes;
- Coupler meets or exceeds FDoT requirements (Section 960-2.2.1.5 and 2.4.4);
- Standard fit for 4.50" [115mm] corrugated plastic duct.

0	12/20/16	First issue	L.C.	T.C.
Rev.	Date	Description	Drawn	Checked

SECTION A-A



Treatment: Polypropylene - according to ASTM D4101



GTI SLIP-ON COUPLER W/ 21mm PORT for Internal Bonded System Standard fit for 27AMTS15

TENSA AMERICA LLC - www.tensaamerica.com - PHONE: +1 305-866-9917 1111 KANE CONCOURSE, S.TE 200 - BAY HARBOR ISLAND - 33154 FL

Drawn : L.CIVATI Checked : T.CICCONE

Part # : I-27-07-02

Code: 220466

Dimensions : INCH [mm]
mm FOR REFERENCE ONLY Date: 12/20/2016 Document Property of TENSA AMERICA LLC

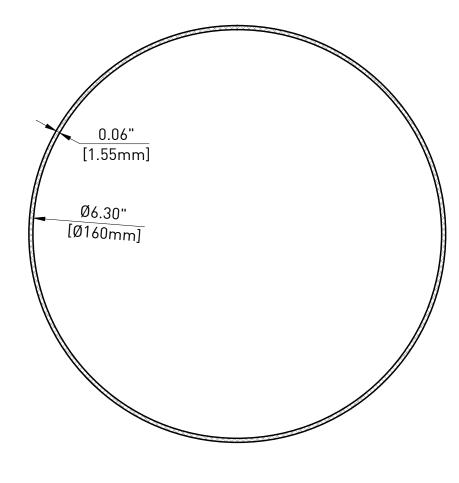
This drawing contains proprietary information restricted solely for use on this project and may not be reproduced in whole or in part. For any other use without the expressed written permission of TENSA AMERICA LLC, the company will safeguard its rights according to the civil and penal previsions of the Law.

Title :

Ø6.30" [Ø160mm] \sim 4.43" [112mm]

ELEVATION

SECTION A-A



INSTALLATION

Surface Preparation

- 1. Lightly abrade the coupler (or trumpet) and duct to a distance of 2 inches (50mm) beyond each end of the shrinksleeve.
- 2. Wipe clean the coupler (or trumpet) and duct to remove foreign contaminants. Ensure that the components are dry before cleaning.

Installation

- 3. Completely remove the inner release liner from the sleeve and center the shrinksleeve over the joint to be sealed.
- 4. Using the appropriate sized heat gun or torch, begin at the center of the shrinksleeve and heat circumferentially around the duct and coupler. Use broad strokes.
- 5. Continue heating from the center toward one end of the shrinksleeve until recovery is complete (sleeve has shrunk). In a similar manner heat and shrink the remaining side. Shrinking has been completed when the adhesive begins to ooze at the shrinksleeve edges all around the circumference.
- 6. Finish shrinking the sleeve with long horizontal strokes over the entire surface to ensure a uniform bond.
- 7. Allow the shrinksleeve to cool for two hours prior to usage.

Inspection

- 8. Check the full contact of sleeve with the coupler (or trumpet) and duct.
- 9. Check that adhesive flows beyond both sleeve edges.
- 10. Check that no cracks or holes are present in shrinksleeve backing.

NOTE:

- This drawing is not intended for manufacturing purposes;
- Heat shrink sleeve meets or exceeds FDoT requirements (Table 2.2.1.8-1 Section 960);
- Tabular sleeve diameter:

••• 6.3" [160mm] as supplied

••• 4.3" [110mm] fully recovered

0	12/20/16	First issue	L.C.	T.C.
Rev.	Date	Description	Drawn	Checked

Material :

Coated Polyolefin Backing - according to FDoT Tab.2.2.1.8-1 Sec.960

Treatment :



CANUSA-CPS HEAT SHRINK
SLEEVE - Standard fit for
27AMTS15 and 31AMTS15

TENSA AMERICA LLC - www.tensaamerica.com - PHONE: +1 305-866-9917 1111 KANE CONCOURSE, S.TE 200 - BAY HARBOR ISLAND - 33154 FL

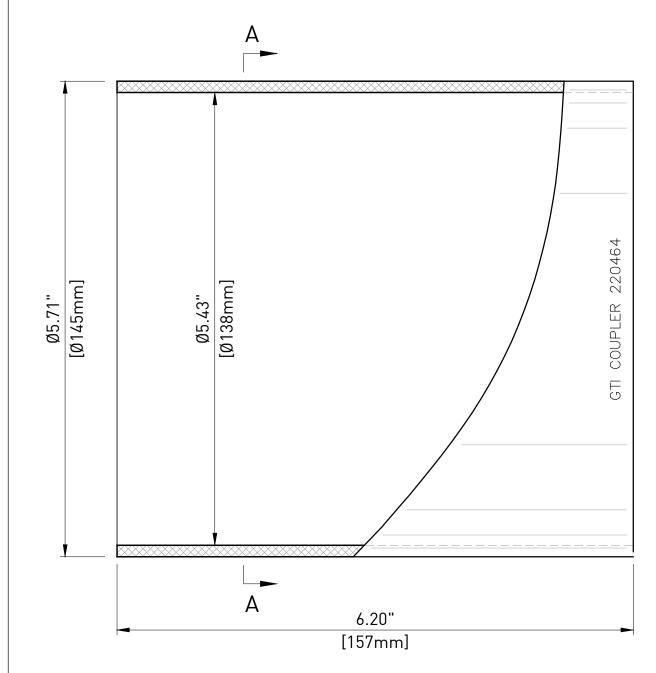
Date: 12/20/2016 Dimensions: INCH [mm] mm FOR REFERENCE ONLY

 Drawn : L.CIVATI
 Checked : T.CICCONE

 Part #: 27-07-06
 Code : PLA-125-112-BK

Document Property of TENSA AMERICA LLC

SECTION/ELEVATION

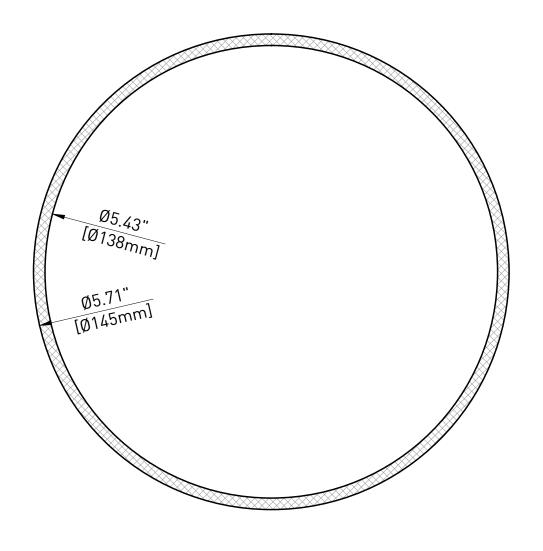


NOTE:

- This drawing is not intended for manufacturing purposes;
- Coupler meets or exceeds FDoT requirements (Section 960-2.2.1.5 and 2.4.4);
- Standard fit for 4.50" [115mm] corrugated plastic duct.

Ī	0	12/20/16	First issue	L.C.	T.C.
	Rev.	Date	Description	Drawn	Checked

SECTION A-A



Material : Treatment : Polypropylene - according to ASTM D4101 -



Title :

GTI STEPLESS COUPLER Adaptation for 4.50" duct with 27AMTS15 trumpet

TENSA AMERICA LLC - www.tensaamerica.com - PHONE: +1 305-866-9917 1111 KANE CONCOURSE, S.TE 200 - BAY HARBOR ISLAND - 33154 FL

Drawn : L.CIVATI

 ${\sf Checked}: {\sf T.CICCONE}$

Code: 220464

Date : 12/20/2016

Dimensions : MCH [mm] mm FOR REFERENCE ONLY

Part # : 27-07-07

Document Property of TENSA AMERICA LLC