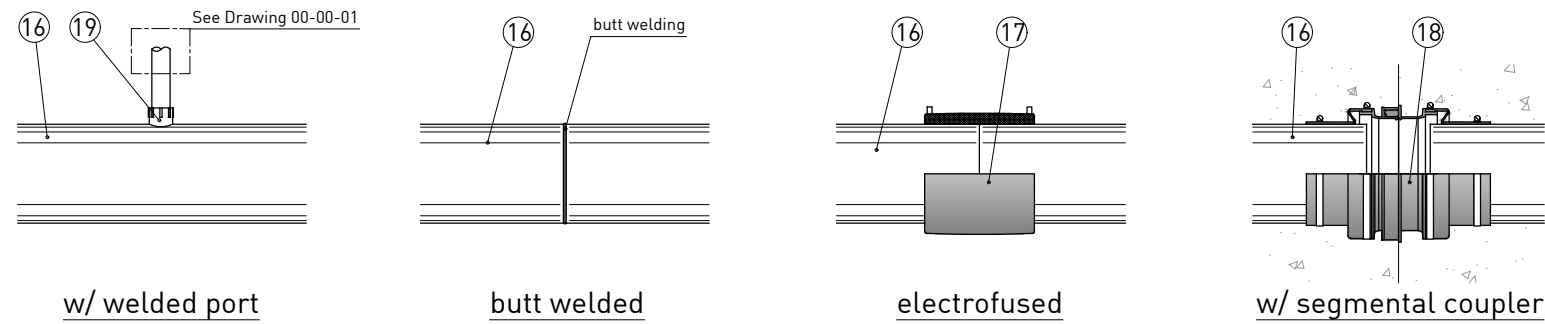


CAUTION

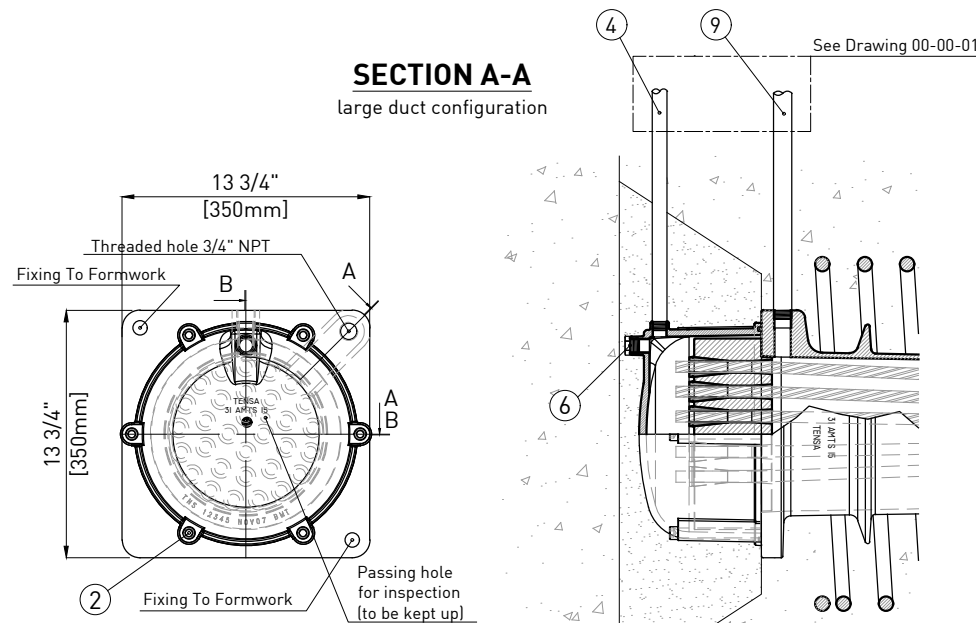
Assembly of anchorage and installation of tendons shall only be performed by qualified post-tensioning specialist personnel.

This installation procedure is generic; follow the specific procedure for each project and the FDOT specifications.



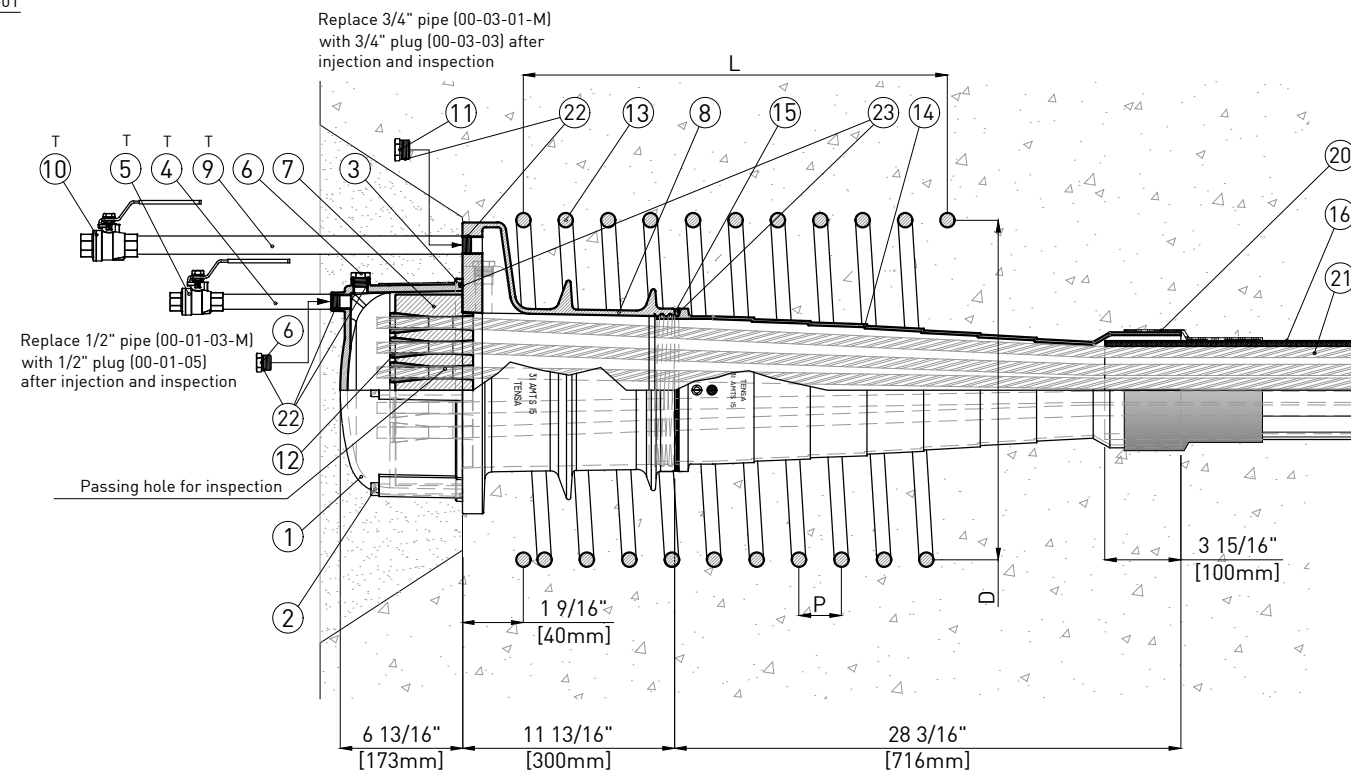
INTERMEDIATE COUPLING DETAILS

see installation procedures



END VIEW

SECTION B-B
top injection and venting



SECTION A-A

front injection and venting

INSTALLATION

1. Preassemble anchor (AN) and plastic trumpet (PT) (some silicone grease shall be used to facilitate the threading and the compression of the gasket).
 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 rotated such as the side injection hole points up.
 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 pipe attachment (if using side injection hole). Align axis of SR with AN. Seal unused port in AN.
 4. Install the smooth duct as shown on shop drawings and insert it into PT, sealing the connection by heat shrink sleeve (or, if not possible, with heat shrink wrap) in order to prevent concrete from penetrating.
 5. Carry out the pressure test.
- Concreting can now proceed.
6. After completion of concrete placement, remove the pocket former and prove that duct is clear of any obstructions or damage and that all injection vents are free and secured.
 7. Install strands by pushing or pulling individually or as a bundle into duct. Allow sufficient extra length at the active anchorage for stressing.
 8. Check the wedge plate (WP) for rust and dirt, clean wedge holes with wire brush if necessary. Lightly grease or oil wedge holes.
 9. Check wedges for rust. Discard rusty wedges and use only clean ones.
 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 jack while stressing.
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 O-ring sealing on AN using six bolts (some silicone grease shall be used to facilitate the compression of the O-ring).
 14. Thread 1/2" NPT pipe for injection onto the PC and the 3/4" NPT pipe 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.
- Injection can now proceed.
16. Wax 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 injection inlets/outlets have to be sealed with plugs soon after injection.
 18. Fill holes with non-shrink grout after post injection operation and inspection are completed.

BILL OF MATERIALS

| ITEM | PART # | DESCRIPTION | MATERIAL |
|------|---------------|-----------------------------------|---|
| 1 | 31-01-00 | Protection Cap | Nylon S-PA0401 - according to ASTM D5989 |
| 2 | 31-01-01 | Protection Cap Bolts | Stainless Steel GR316L - according to ASTM F593 |
| 3 | 31-01-02 | Protection Cap O-Ring | NBR - according to FDOT Tab.2.2.1.7-1 Sec.960 |
| 4 | 00-01-03-M | NPT Pipe Nipple 1/2" | SCH40 steel |
| 5 | 00-01-04-M | NPT Ball Valve 1/2" | SCH40 steel |
| 6 | 00-01-05 | NPT Plug 1/2" | High Density Polyethylene - according to ASTM D3350 |
| 7 | E-31-02-00 | Wedge Plate | Steel AISI C1045 Normalized |
| 8 | 31-03-00 | Anchor | Ductil Iron ASTM A536 GR80-55-06 + Galvanization according to ASTM A123 |
| 9 | 00-03-01-M | NPT Pipe Nipple 3/4" | SCH40 steel |
| 10 | 00-03-02-M | NPT Ball Valve 3/4" | SCH40 steel |
| 11 | 00-03-03 | NPT Plug 3/4" | High Density Polyethylene - according to ASTM D3350 |
| 12 | 00-04-00 | Wedges | Steel AISI 12L14 - according to ASTM A108 + Heat treatment |
| 13 | 31-05-00 | Spiral | Steel GR60, #6 - according to ASTM A615 |
| 14 | 31-06-00 | Trumpet | High Density Polyethylene - according to ASTM D3350 |
| 15 | 31-06-01 | Compression Seal | NBR - according to FDOT Tab.2.2.1.7-1 Sec.960 |
| 16 | E-IU-31-07-08 | Smooth Plastic Duct 5.563" | High Density Polyethylene - according to ASTM D3350 |
| 17 | E-IU-31-07-12 | Electrofusion Duct Coupler 5.563" | High Density Polyethylene - according to ASTM D3350 |
| 18 | 31-07-03 | Segmental Duct Coupler 5.125" | See proper drawing |
| 19 | 00-07-04-EM | Vent Port 3/4" NPT PE | Polyethylene - according to ASTM D3350 |
| 20 | E-IU-27-07-13 | High Temp Heat Shrink Sleeve | Coated Polyolefin Backing - according to FDOT Tab.2.2.1.8-1 Sec.960 |
| 21 | 00-08-00 | Strand 0.6" | Steel GR270 - according to ASTM A416 |

NOTE: Components marked with "T" on the drawing are temporary

MISCELLANEOUS MATERIALS


| ITEM | DESCRIPTION |
|------|---|
| 22 | Commercially available thread seal tape |
| 23 | Commercially available and compatible silicone grease |

SPIRAL

| | 4000 PSI [27.5MPA] | 6500 PSI [45MPA] |
|----------------|--------------------|------------------|
| CONCRETE CLASS | 4000 PSI [27.5MPA] | 6500 PSI [45MPA] |
| LENGTH (L) | 25-1/2" [649mm] | 20-7/8" [529mm] |
| DIAMETER (D) | 20-1/2" [521mm] | 15-3/4" [401mm] |
| PITCH (P) | 2-3/8" [60mm] | |
| BAR DIAMETER | #6 - 3/4" [19mm] | |
| N. OF TURNS | 12 | 10 |

| Rev. | Date | Description | Drawn | Checked |
|------|----------|------------------------------|-------|---------|
| A | 08/28/19 | Segmental duct coupler added | L.C. | T.C. |
| 0 | 07/04/18 | First issue | L.C. | T.C. |

| | |
|-----------------|------------------|
| Material : - | Treatment : - |
|-----------------|------------------|



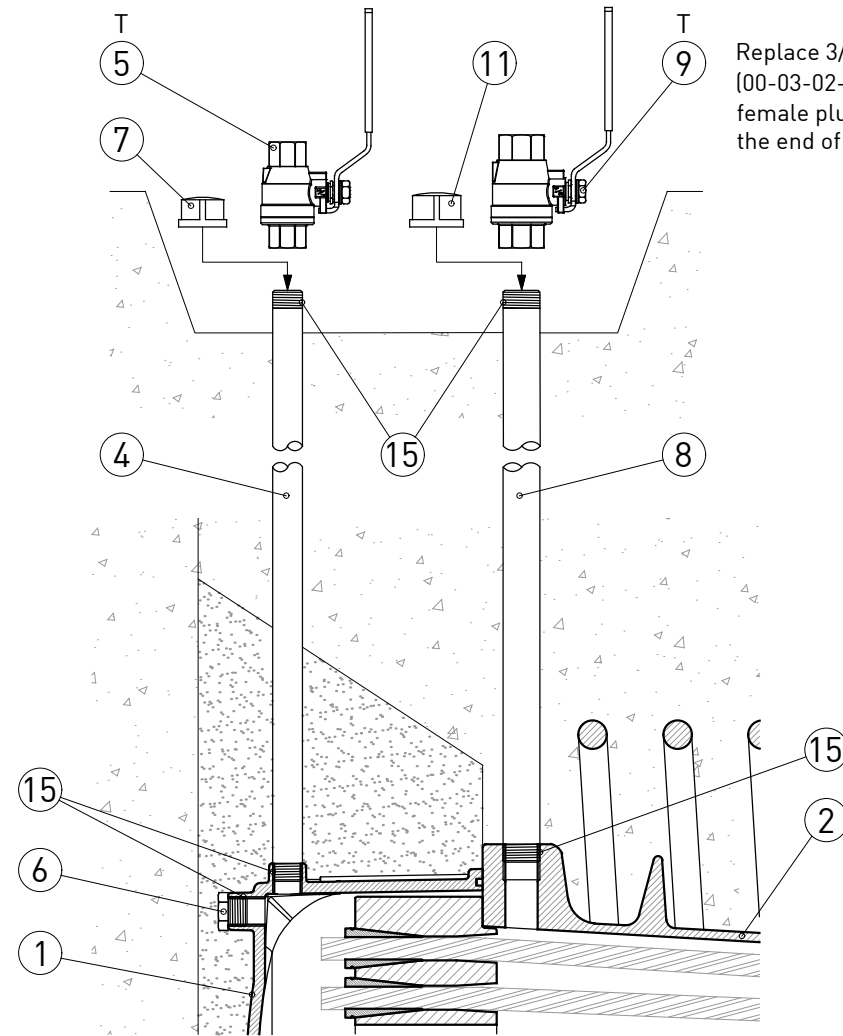
TENSA AMERICA
GRUPPO DE ECCHER

**INTERNAL UNBONDED
PT SYSTEM ASSEMBLY
for 31AMTS15 (31-0.6")**

| | | | |
|--|---|----------------------|---------------------|
| 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.CICCONO |
| Date : 08/28/2019 | Dimensions : <small>(INCH/mm) mm FOR REFERENCE ONLY</small> | Part # : IU-31-00-00 | Code : - |

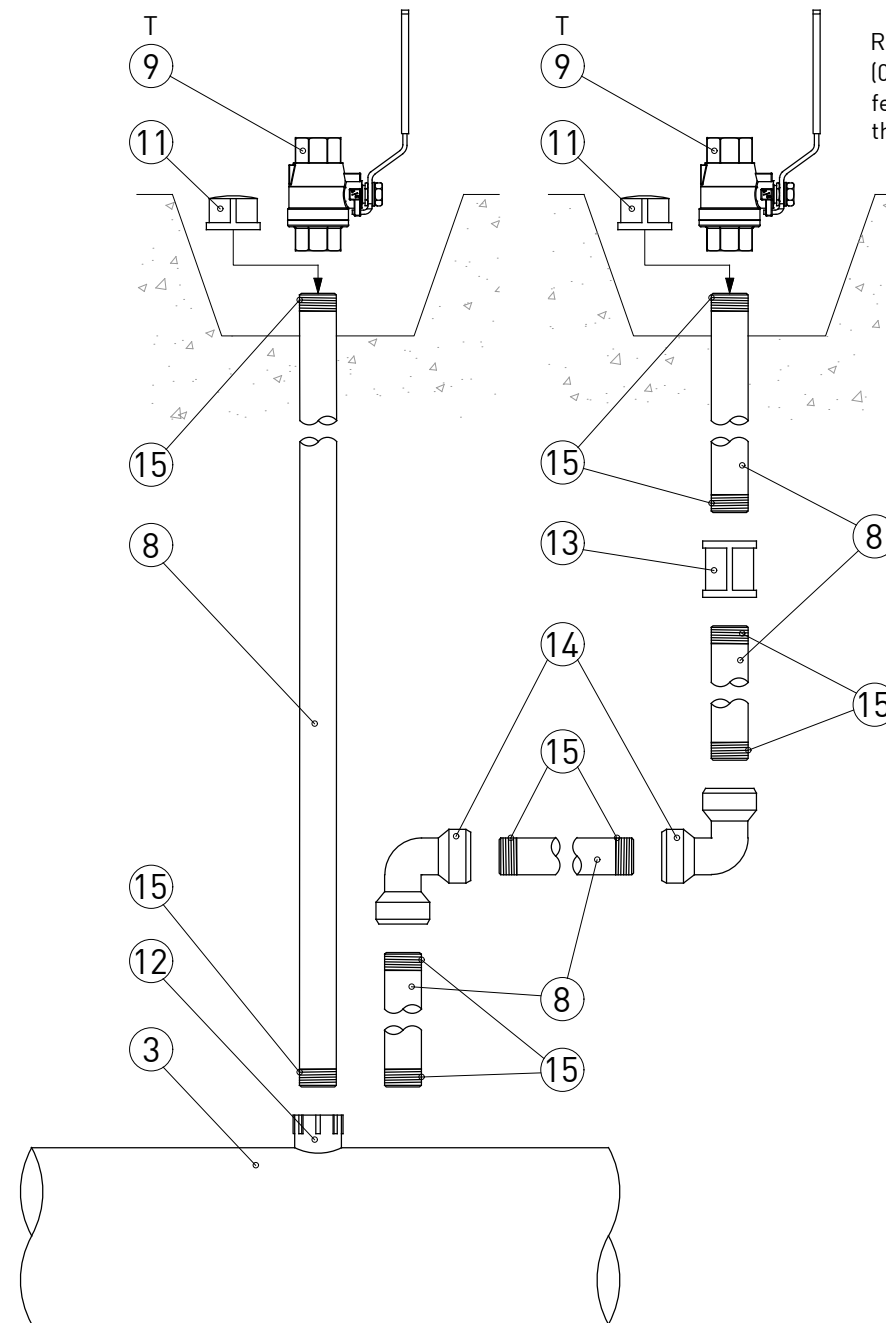
Document Property of TENSA AMERICA LLC
This drawing contains proprietary information restricted solely for use on this project and may not be reproduced in whole or in part. For any other use without the expressed written permission of TENSA AMERICA LLC, the company will safeguard its rights according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

Replace 1/2" ball valve (00-01-04-M) with 1/2" female plug (00-01-06) at the end of operations



ANCHORAGE CONFIGURATION
top venting and injection

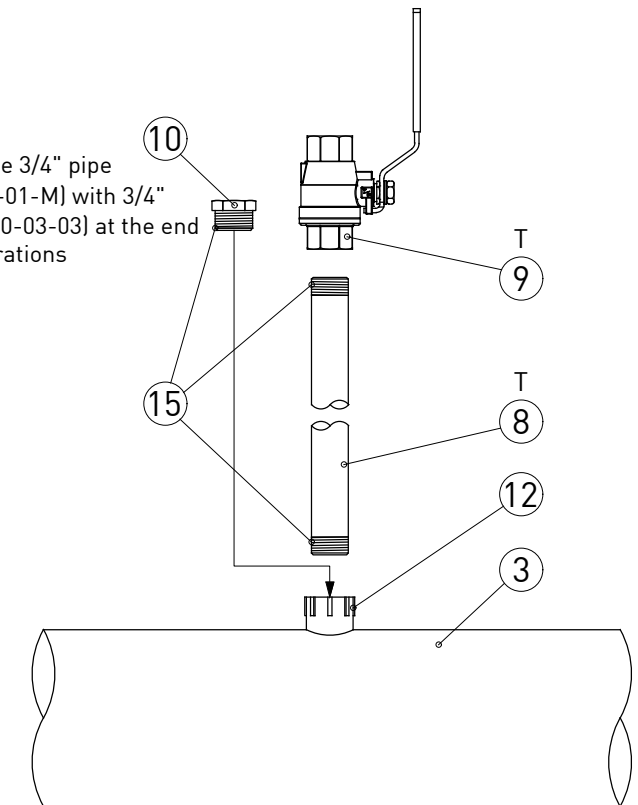
Replace 3/4" ball valve (00-03-02-M) with 3/4" female plug (00-03-04) at the end of operations



PIPE INTERNAL CONFIGURATION

Replace 3/4" ball valve (00-03-02-M) with 3/4" female plug (00-03-04) at the end of operations

Replace 3/4" pipe (00-03-01-M) with 3/4" plug (00-03-03) at the end of operations



PIPE EXTERNAL CONFIGURATION

| BILL OF MATERIALS | | | |
|-------------------|----------------|-------------------------|---|
| ITEM | PART # | DESCRIPTION | MATERIAL |
| 1 | XX-01-00* | Protection Cap | Nylon S-PA0401 - according to ASTM D5989 |
| 2 | XX-03-00* | Anchor | Ductil Iron ASTM A536 GR80-55-06 + Galvanization according to ASTM A123 |
| 3 | E-IU-XX-07-08* | Smooth Plastic Duct | High Density Polyethylene - according to ASTM D3350 |
| 4 | 00-01-03-M | NPT Pipe Nipple 1/2" | SCH40 steel |
| 5 | 00-01-04-M | NPT Ball Valve 1/2" | SCH40 steel |
| 6 | 00-01-05 | NPT Plug 1/2" | High Density Polyethylene - according to ASTM D3350 |
| 7 | 00-01-06 | NPT Female Plug 1/2" | SCH40 steel |
| 8 | 00-03-01-M | NPT Pipe Nipple 3/4" | SCH40 steel |
| 9 | 00-03-02-M | NPT Ball Valve 3/4" | SCH40 steel |
| 10 | 00-03-03 | NPT Plug 3/4" | High Density Polyethylene - according to ASTM D3350 |
| 11 | 00-03-04 | NPT Female Plug 3/4" | SCH40 steel |
| 12 | 00-07-04-EM | Vent Port 3/4" NPT PE | Polyethylene - according to ASTM D3350 |
| 13 | 00-07-06 | NPT Nipple Coupler 3/4" | SCH40 steel |
| 14 | 00-07-07 | NPT Elbow 3/4" | SCH40 steel |

* depending from system dimension

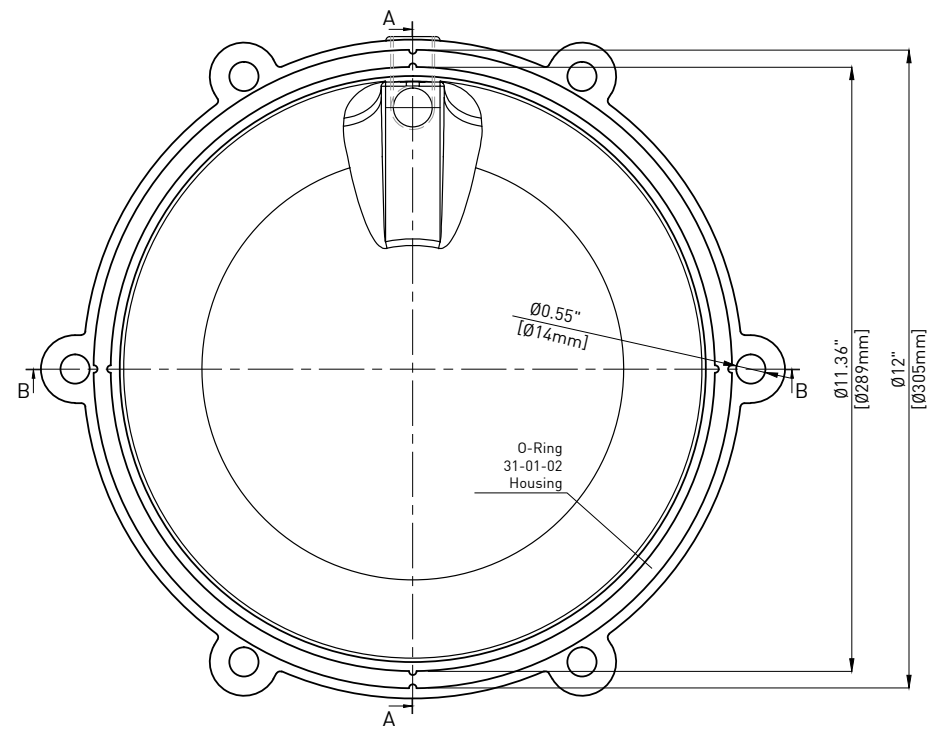
NOTE:

- Vent assemblies can be used as inlet, outlet or drain; when elbows are present, the vent cannot be used for injection / inspection;
- Epoxy grout shall be used to fill recesses: make reference to FDOT standard plans index 462-003 for post-tensioning anchorage and tendon filling details
- Concrete cover must meet FDOT Structures Design Guidelines Section 1.4.2
- Components marked with "T" on the drawing are temporary

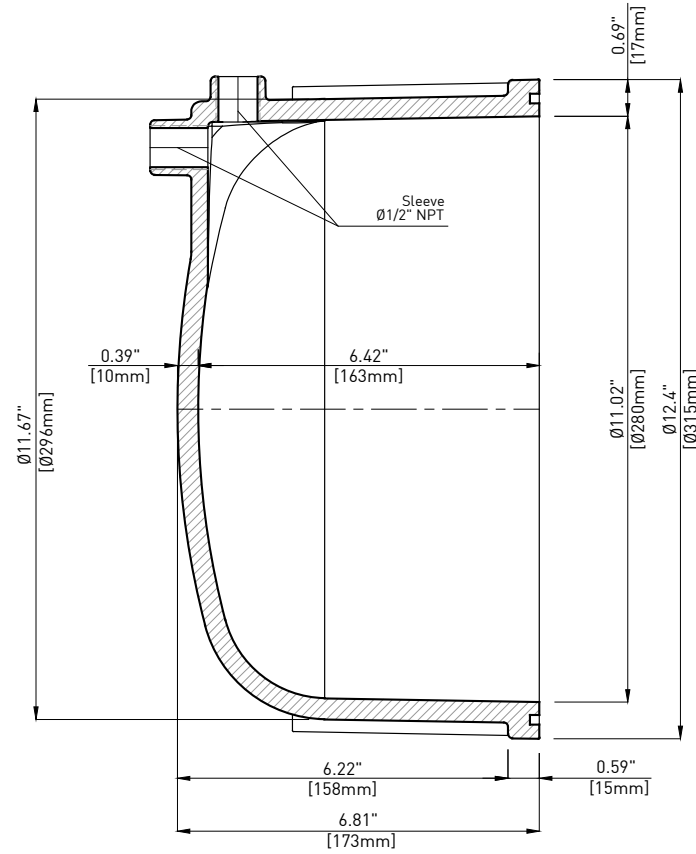
| MISCELLANEOUS MATERIALS | |
|-------------------------|---|
| ITEM | DESCRIPTION |
| 15 | Commercially available thread seal tape |

| | | | | |
|--|---|--|---------------------|---------|
| 0 | 04/26/18 | First issue | L.C. | T.C. |
| Rev. | Date | Description | Drawn | Checked |
| Material : | | Treatment : | | |
| - | | - | | |
| | | Title : | | |
| | | INTERNAL UNBONDED / EXTERNAL VENT ASSEMBLIES | | |
| 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 : 04/26/2018 | Dimensions : <small>(INCH (mm)) mm FOR REFERENCE ONLY</small> | Part # : 00-00-01 | Code : - | |

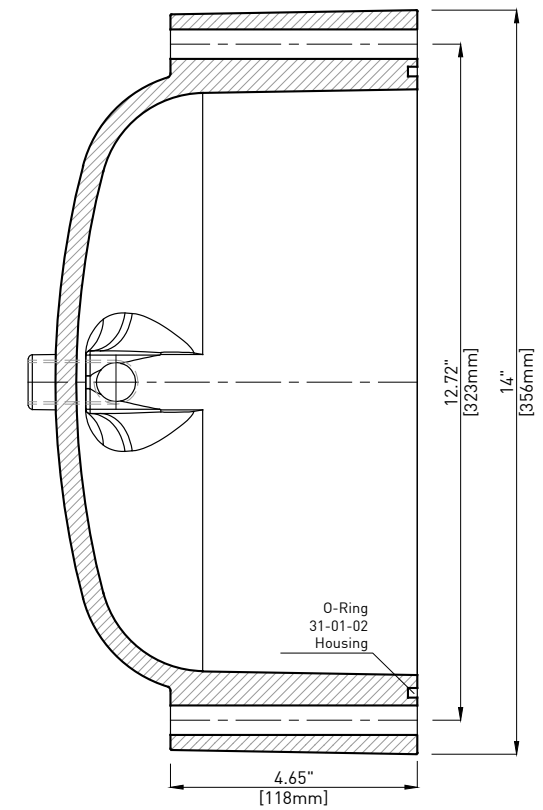
BOTTOM VIEW



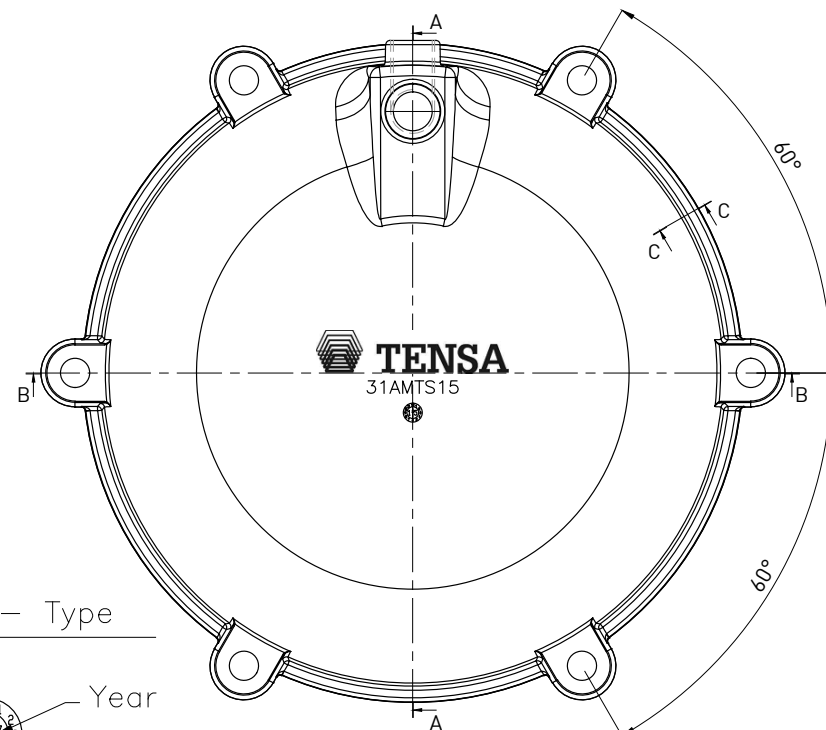
SECTION A-A



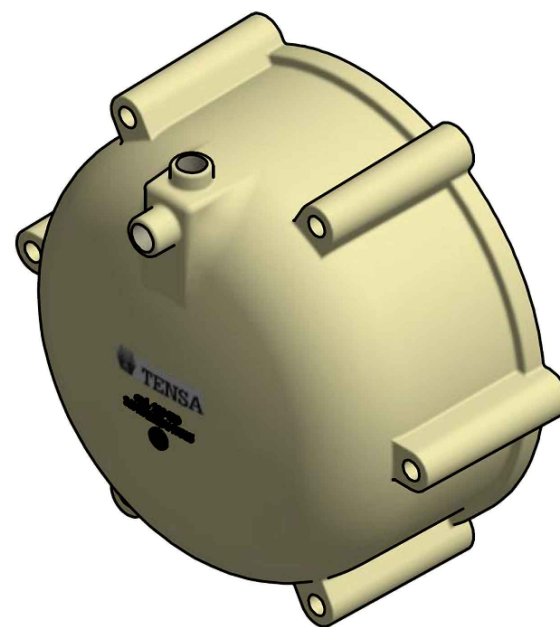
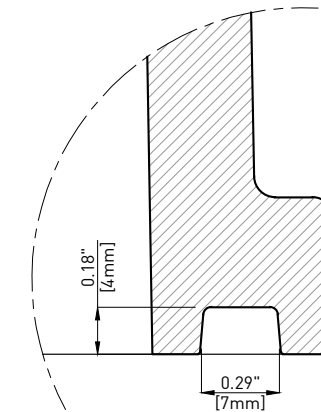
SECTION B-B




TOP VIEW




SECTION C-C

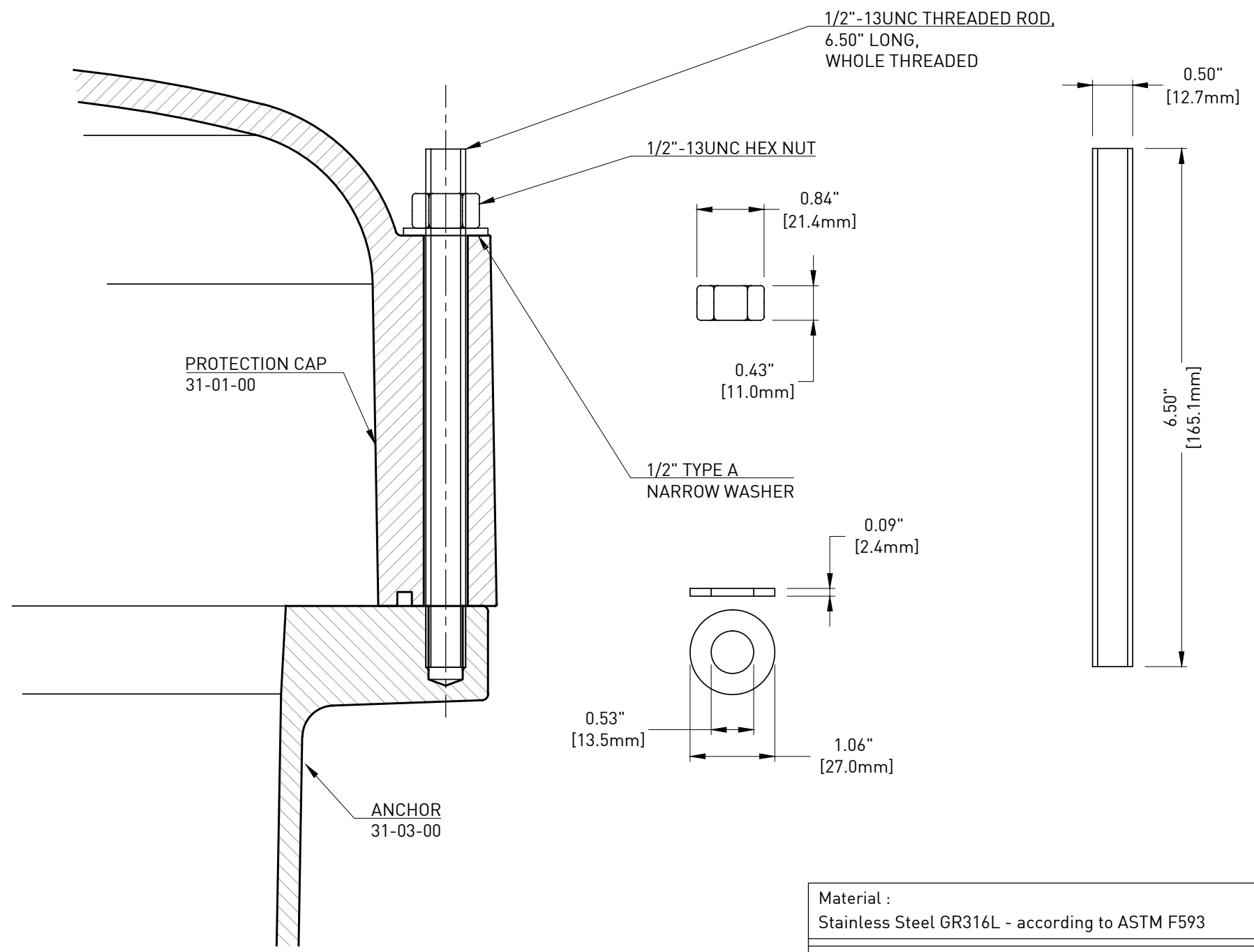



Marking – Type

Month  Year

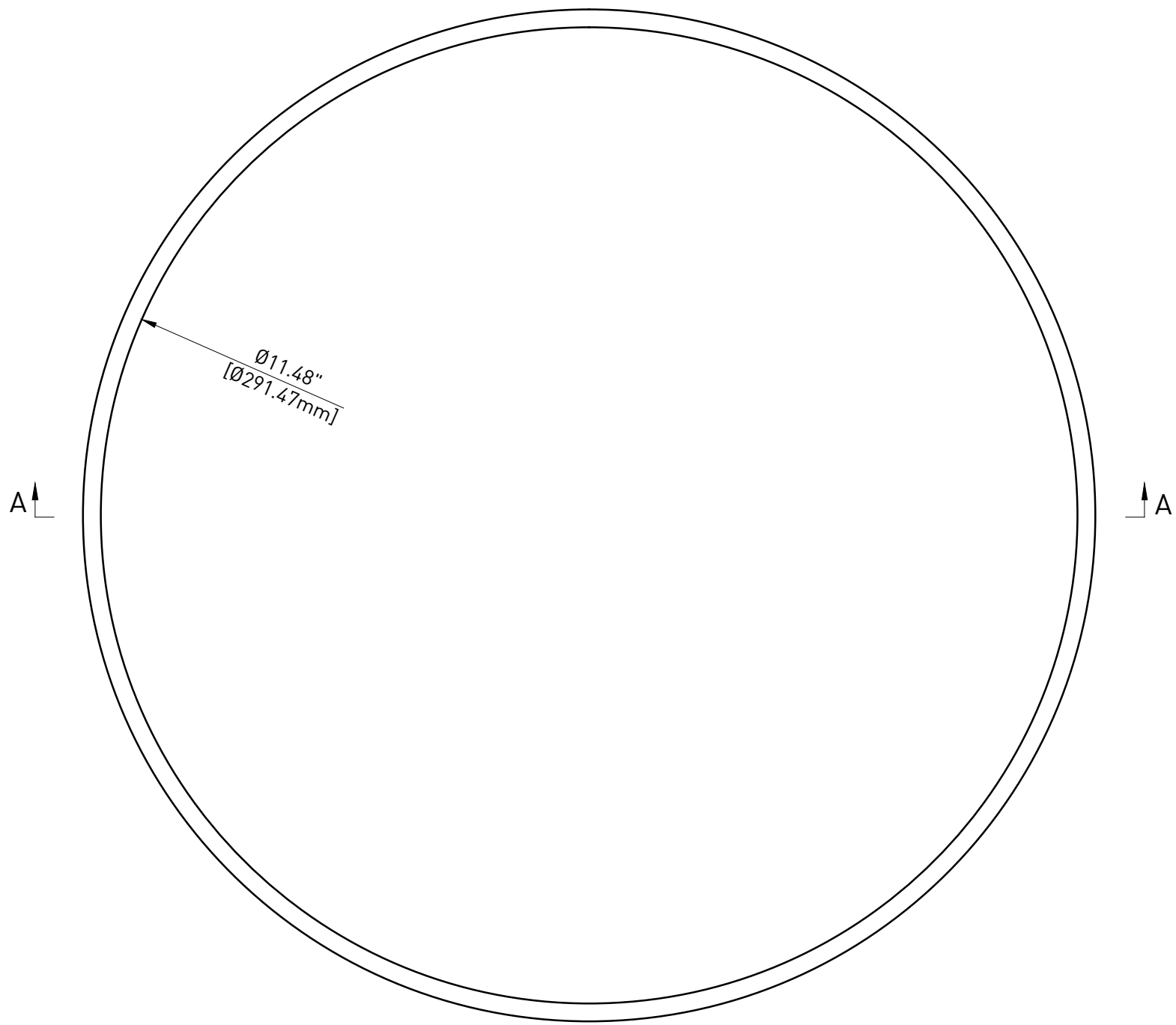
| | | | | |
|------|----------|-------------|-------|---------|
| 0 | 12/20/16 | First issue | L.C. | T.C. |
| Rev. | Date | Description | Drawn | Checked |

| | | | |
|---|---|--|---|
| Material : Nylon S-PA0401 - according to ASTM D5989 | | Treatment : - | |
|  TENSA AMERICA GRUPPO DE ECCHER | | Title : PROTECTION CAP for 31AMTS15 | |
| | | 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.CICCONO |
| Date : 12/20/2016 | Dimensions : <small>INCH (mm) mm FOR REFERENCE ONLY</small> | Part # : 31-01-00 | Code : - |
| <small>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 provisions of the Law.</small> | | | |



| | | | |
|--|---|---|--------------------|
| Material : Stainless Steel GR316L - according to ASTM F593 | | Treatment : - | |
|  | | Title : PROTECTION CAP BOLTS for 31AMTS15 | |
| | | TENSA AMERICA LLC - www.tensaamerica.com - PHONE: +1 305-866-9917 1111 KANE CONCOURSE, S.TE 200 - BAY HARBOR ISLAND - 33154 FL | Drawn : F.MORAGLIA |
| Date : 12/20/2016 | Dimensions : <small>INCH [mm] mm FOR REFERENCE ONLY</small> | Part # : 31-01-01 | Code : - |
| <small>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 provisions of the Law.</small> | | | |

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



SECTION A-A

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

| | |
|--|------------------|
| Material : NBR - according to FDOT Tab. 2.2.1.7-1 Sec.960 | Treatment : - |
|--|------------------|

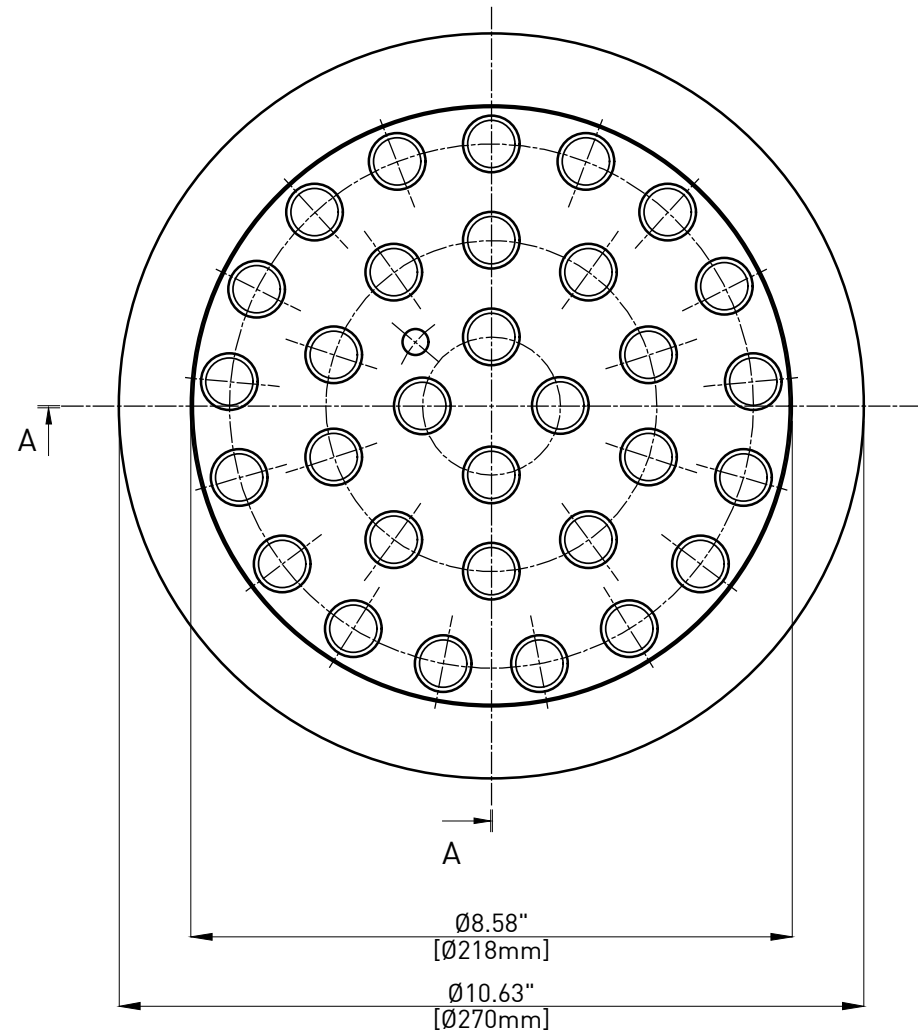
NOTE:

- This drawing is not intended for manufacturing purposes;

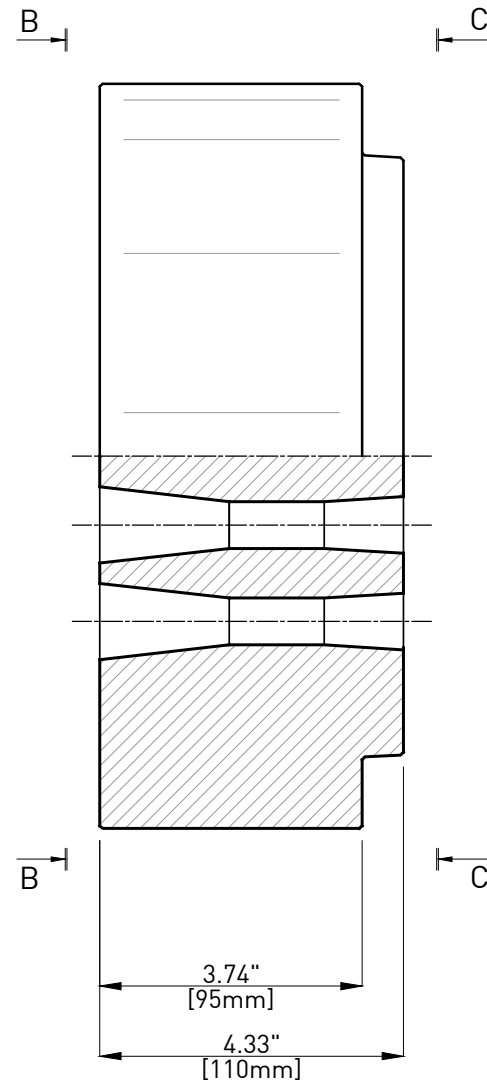
| | | | |
|--|---|--|----------------------------|
| | | Title : Centro Guarnizioni TIGER s.r.l PROTECTION CAP O-RING for 31AMTS15 PT SYSTEM | |
| <small>TENSA AMERICA LLC - www.tensaamerica.com - PHONE: +1 305-866-9917 1111 KANE CONCOURSE, S. TE 200 - BAY HARBOR ISLAND - 33154 FL</small> | | Drawn : L.CIVATI | Checked : T.CICCONE |
| Date : 12/20/2016 | Dimensions : <small>^{INCH [mm]} mm FOR REFERENCE ONLY</small> | Part # : 31-01-02 | Code : OR 061150 |

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 provisions of the Law.

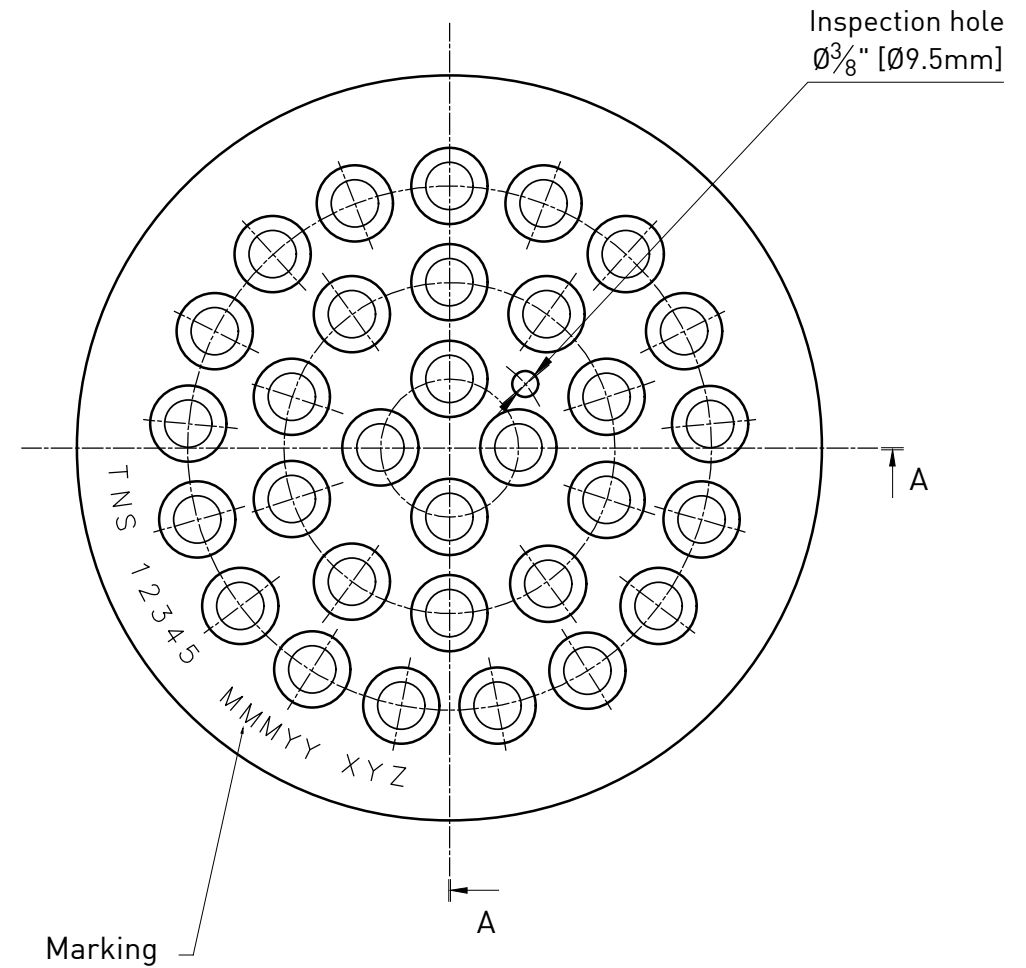
VIEW C-C




SECTION A-A

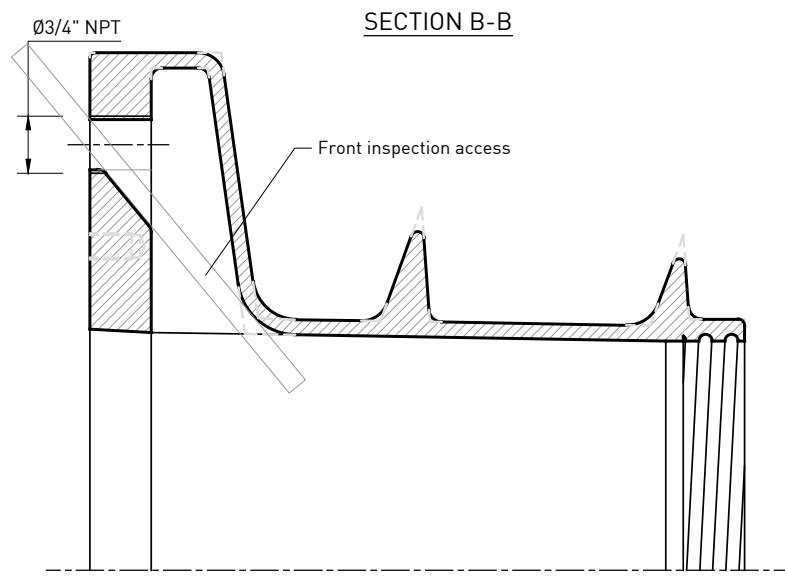
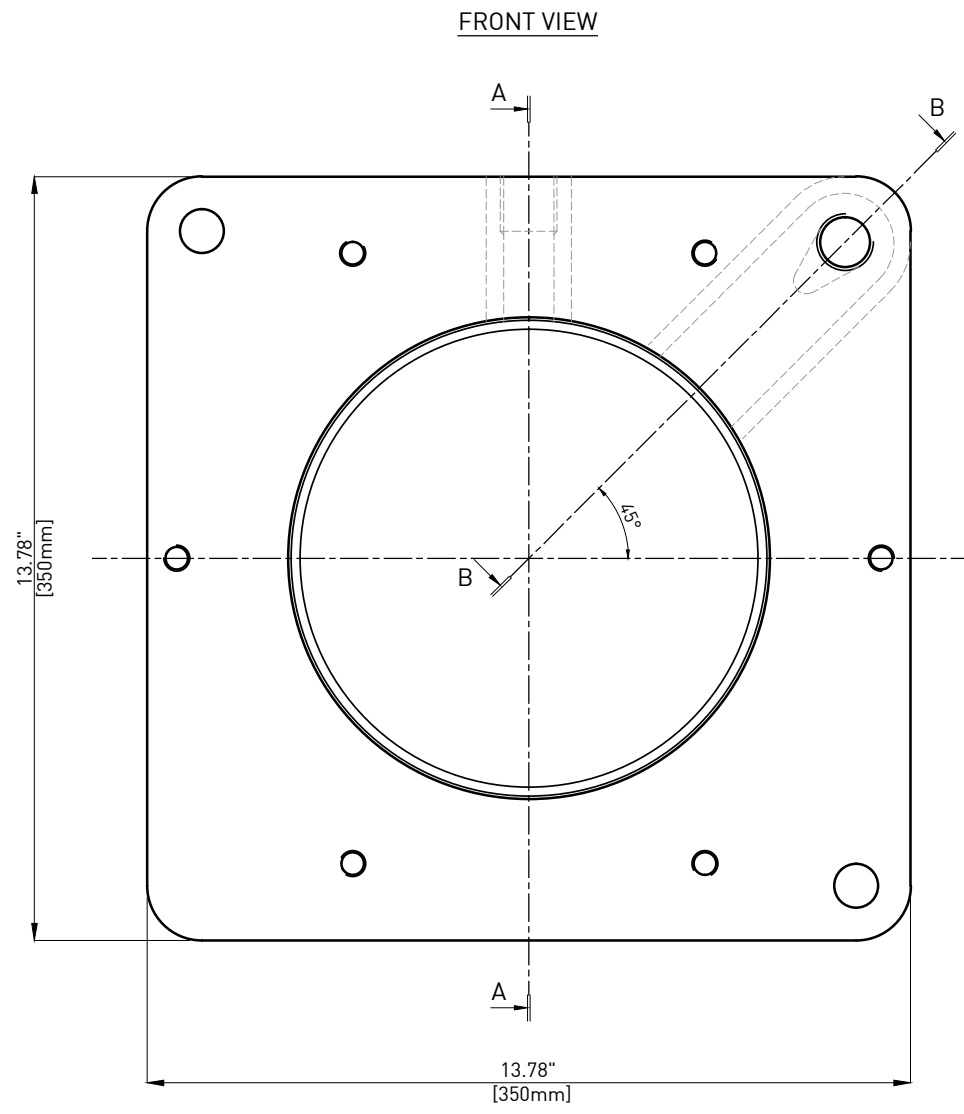
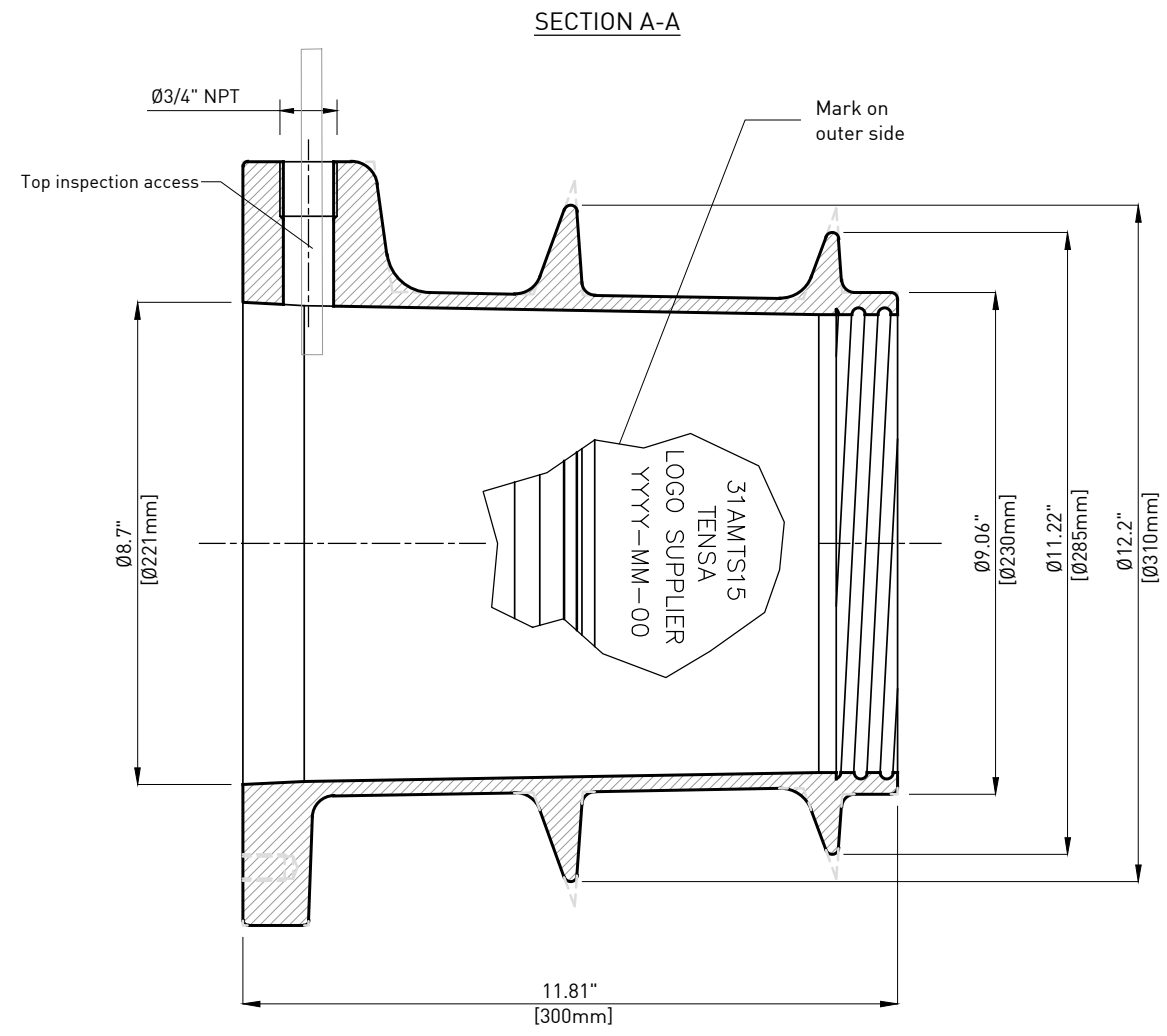


VIEW B-B




| | | | |
|--|---|--|---------------------|
| Material : Steel AISI C1045 Normalized | | Treatment : - | |
|  | | Title : WEDGE PLATE for 31AMTS15 (31-06") External and Internal Unbonded systems | |
| | | Drawn : L.CIVATI | Checked : T.CICCONE |
| Date : 12/20/2016 | Dimensions : INCH [mm] mm FOR REFERENCE ONLY | Part # : E-IU-31-02-00 | Code : - |
| 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 provisions of the Law. | | | |

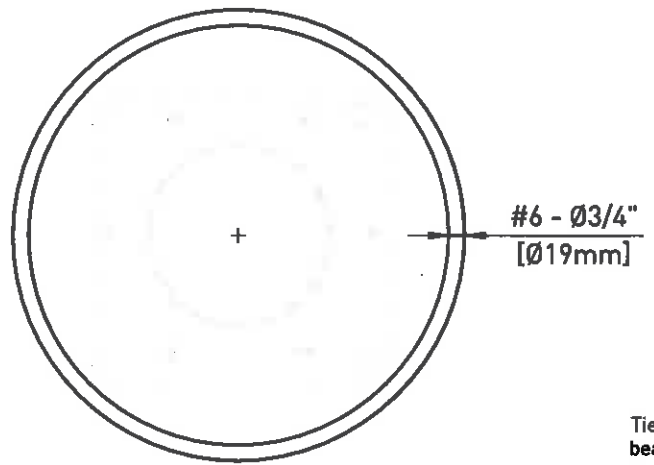
| Rev. | Date | Description | Drawn | Checked |
|------|----------|-------------|-------|---------|
| 0 | 12/20/16 | First issue | L.C. | T.C. |



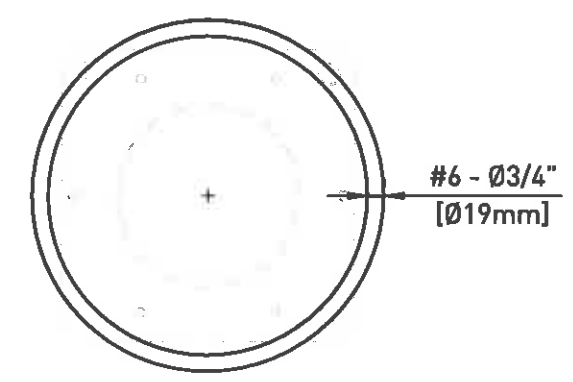
| | | | | |
|------|----------|-------------|-------|---------|
| 0 | 12/20/16 | First issue | F.M. | T.C. |
| Rev. | Date | Description | Drawn | Checked |

| | | | |
|---|--|---|---------------------|
| Material : Ductil Iron ASTM A536 GR80-55-06 | | Treatment : Galvanization according to ASTM A123 | |
|  | | Title : ANCHOR 31AMTS15 (31-0.6") | |
| | | TENZA 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 : F.MORAGLIA | Checked : T.CICCONE |
| Date : 12/20/2016 | | Part # : 31-03-00 | Code : - |
| Document Property of TENZA 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 TENZA AMERICA LLC, the company will safeguard its rights according to the civil and penal provisions of the Law. | | | |

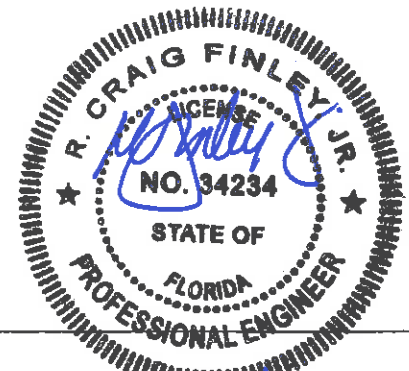
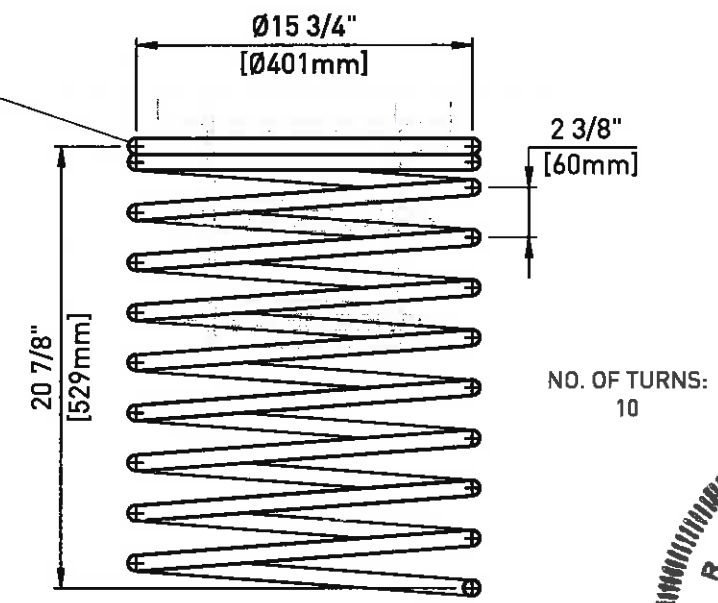
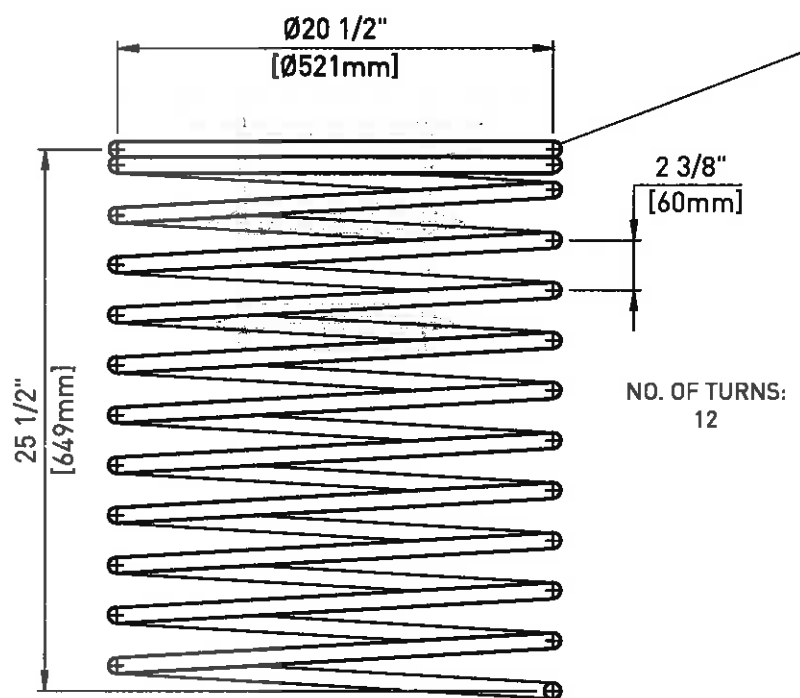
STANDARD SPIRAL
FOR CONCRETE CLASS $f'_{ci} = 4000\text{psi}$ [27.5MPa] *



STANDARD SPIRAL
FOR CONCRETE CLASS $f'_{ci} = 6500\text{psi}$ [45MPa] *



Tie the first 1-1/2 turns at the bearing plate side of the spiral to achieve full development



I have independently reviewed the calculations and testing reports, along with the documentation and certified that TENSA system spiral rebar detail meets the requirements as outlined in paragraph 3.3 PTI Anchorage Zone Design.

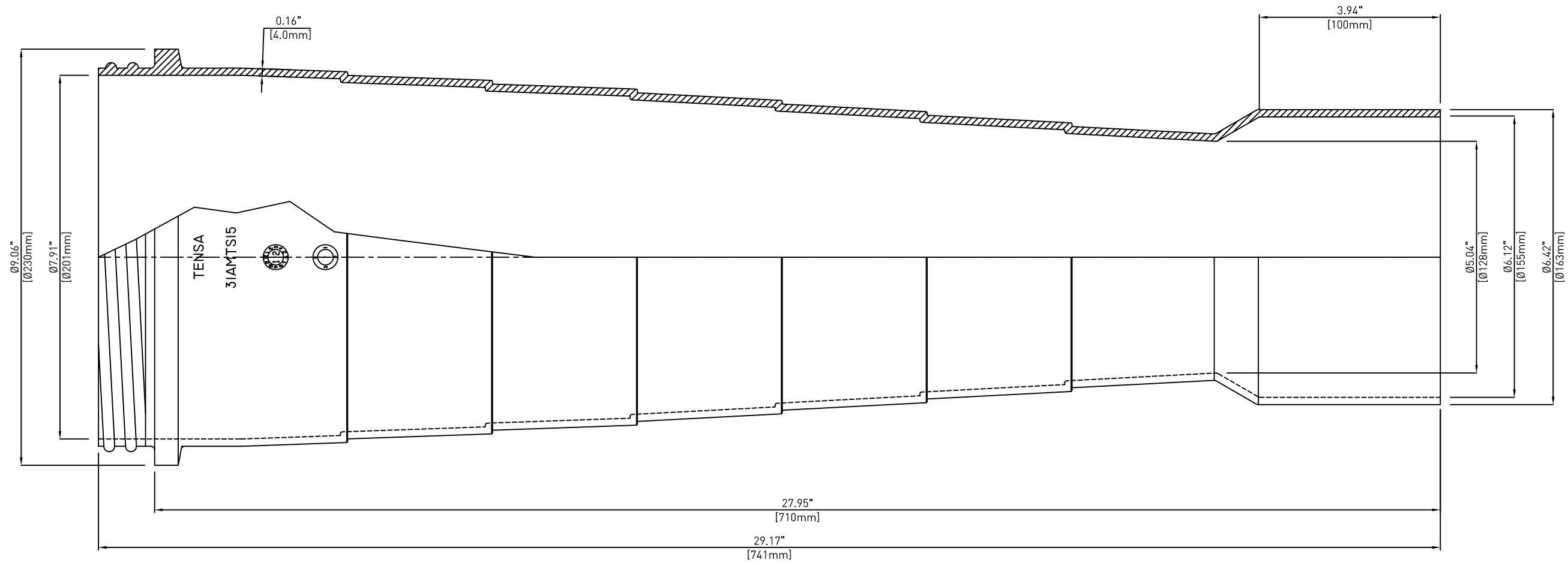
(*) Do not apply post-tensioning forces until the concrete mean compressive strength f'_{ci} is not less than the values shown in the present drawing.

NOTE: The local zone reinforcement is to be shown on the shop drawings.

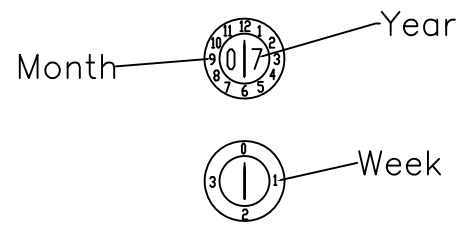
| Rev. | Date | Description | Drawn | Checked |
|------|----------|-------------|-------|---------|
| 0 | 12/20/17 | First issue | F.M. | T.C. |

| | | | |
|---|---|---|---------------------|
| Material : Steel Rebar GR60, #6 - according to ASTM A615 | | Treatment : - | |
| | | Title : SPIRAL REBAR for 31AMTS15 | |
| | | Drawn : F.MORAGLIA | Checked : T.CICCONO |
| Date : 12/20/2017 | Dimensions : INCH [mm] mm FOR REFERENCE ONLY | Part # : 31-05-00 | Code : - |
| <small>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 provisions of the Law.</small> | | | |


12/22/17



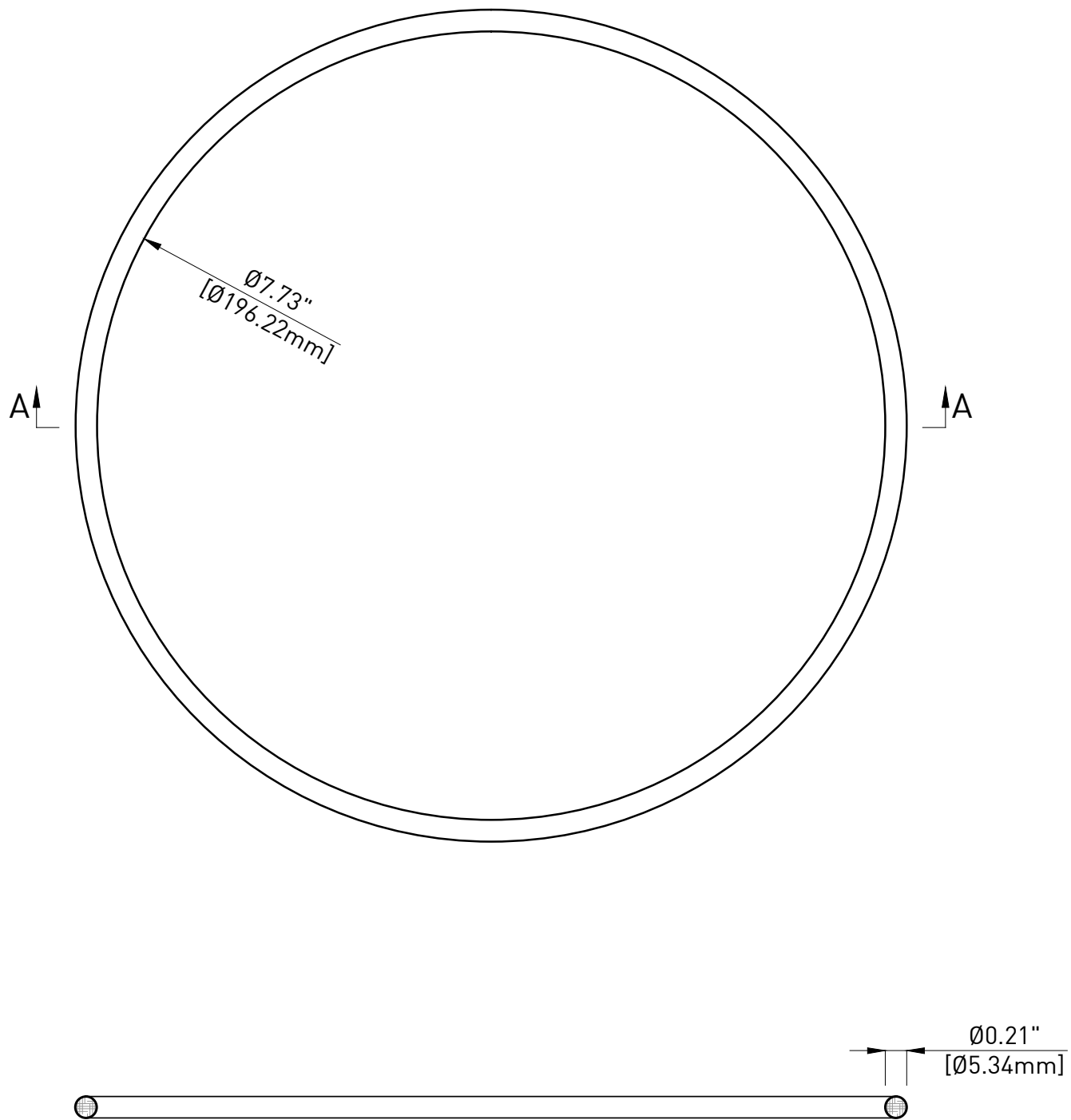
Marking - Type



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

| | | | |
|---|---|---|------------------|
| Material : High Density Polyethylene - according to ASTM D3350 | | Treatment : - | |
|  | | Title : TRUMPET for 31AMTS15 Bonded and Internal Unbonded / External systems | |
| | | 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 |
| Date : 12/20/2016 | Dimensions : <small>INCH [mm]</small> <small>mm FOR REFERENCE ONLY</small> | Part # : 31-06-00 | Code : - |


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 provisions of the Law.

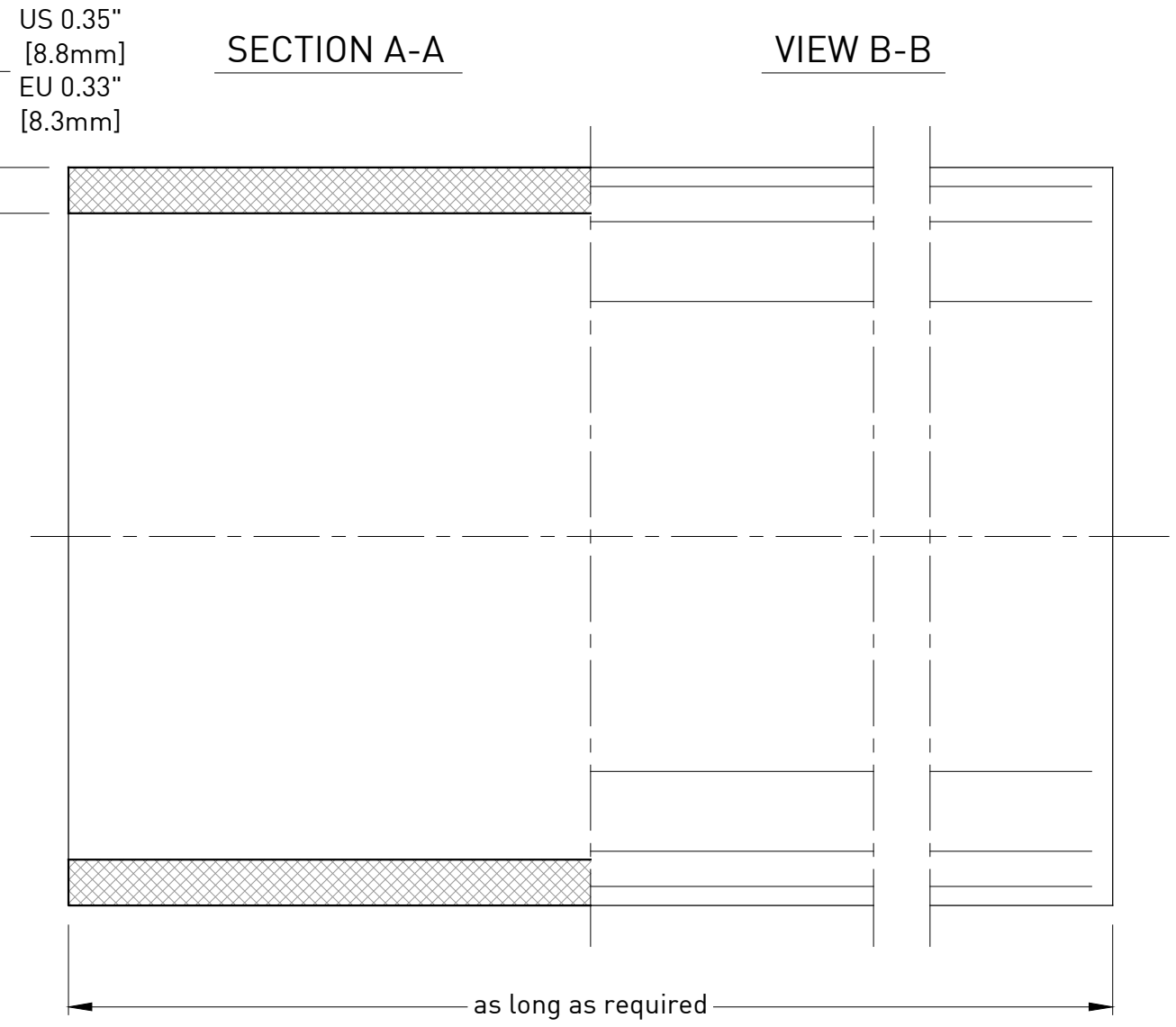
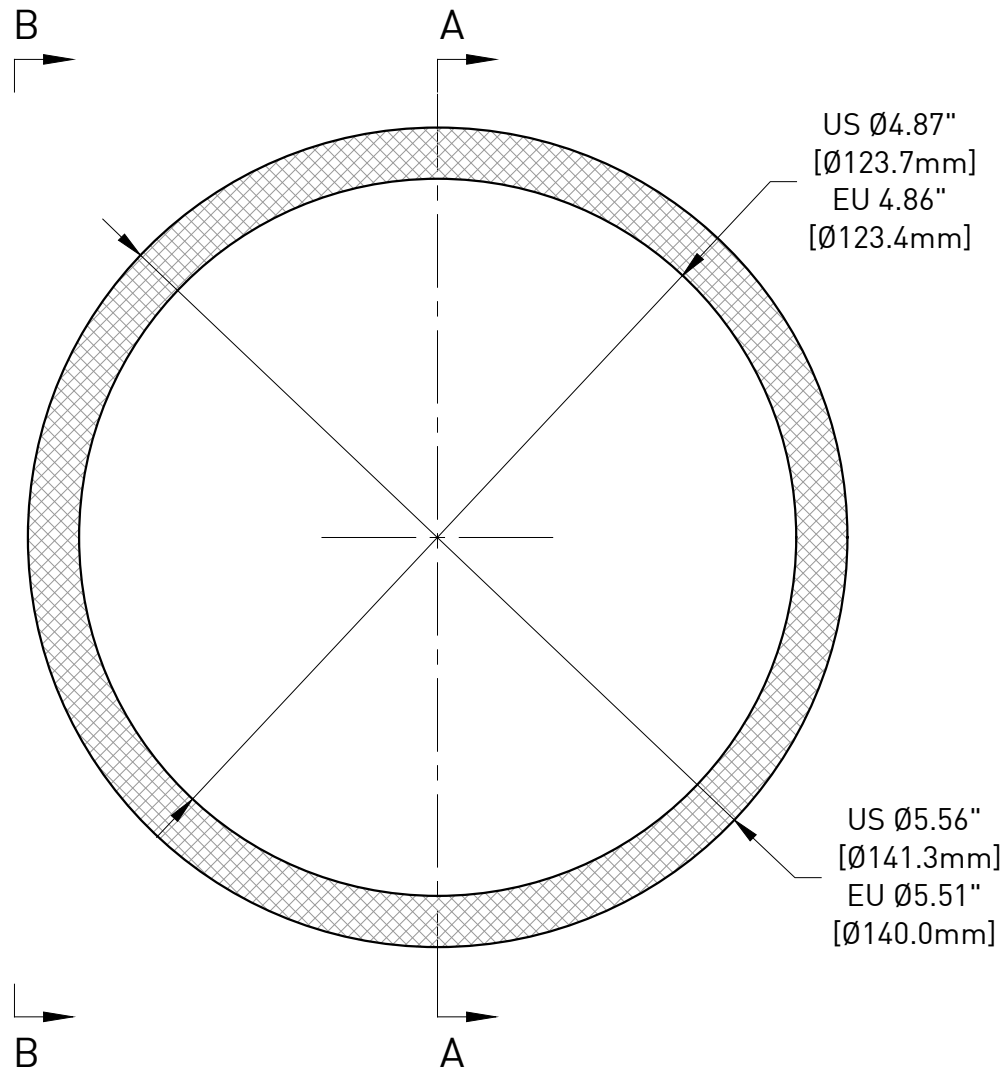


SECTION A-A

NOTE:

- This drawing is not intended for manufacturing purposes.

| 0 | 08/23/16 | First issue | L.C. | T.C. |
|---|---|---|---------------------|---------|
| Rev. | Date | Description | Drawn | Checked |
| Material : NBR - according to FDOT Tab. 2.2.1.7-1 Sec.960 | | Treatment : - | | |
|  | | Title : Centro Guarnizioni TIGER s.r.l COMPRESSION SEAL for 31AMTS15 between Anchor and Trumpet | | |
| TENZA 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 : 08/23/2016 | Dimensions : <small>INCH [mm]</small> <small>mm FOR REFERENCE ONLY</small> | Part # : 31-06-01 | Code : OR 06775 | |
| <small>Document Property of TENSA AMERICA LLC</small> <small>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 provisions of the Law.</small> | | | | |



| | |
|--|----------------|
| Minimum radius of curvature for prefabricated sections of duct | 13 ft (3.96 m) |
| Minimum radius of curvature for straight sections of duct to be field bent | 30 ft (9.14 m) |

NOTE:

- This drawing is not intended for manufacturing purposes;
- Duct meets FDoT requirements (Par. 2.2.1.2 and 2.4.4 Section 960):
 - maximum dimensional ratio (DR) of 17 as per ASTM D3035 or ASTM F714
 - 125 psi rated
 - minimum cell class of 445574C as per ASTM D3350
 - minimum OIT of 40 minutes as per ASTM D3895

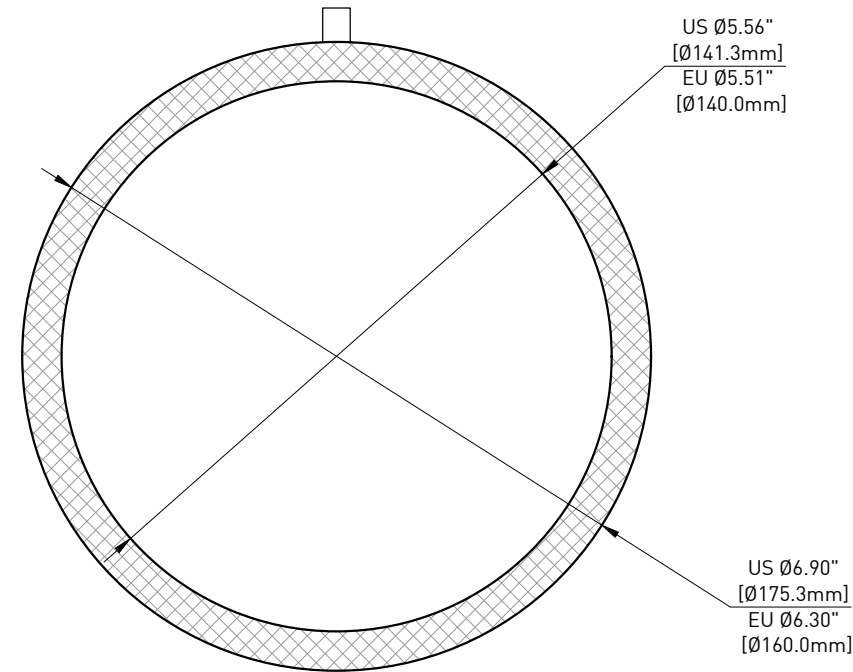
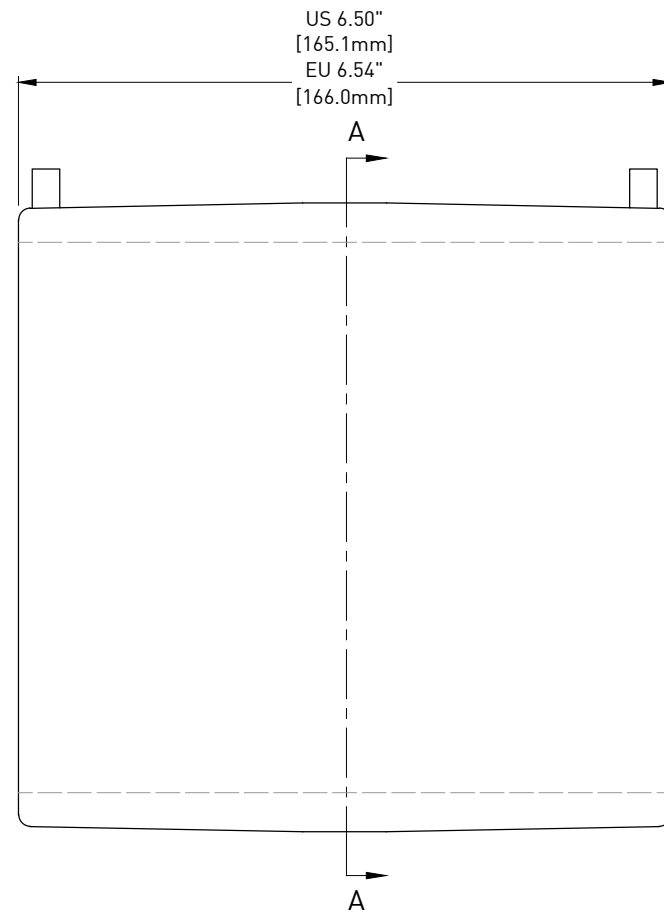
| Rev. | Date | Description | Drawn | Checked |
|------|----------|--|-------|---------|
| A | 10/08/19 | Updated with measures for US and European versions | L.C. | T.C. |
| 0 | 04/26/18 | First issue | L.C. | T.C. |

| | |
|--|------------------|
| Material : High Density Polyethylene- according to ASTM D3350 | Treatment : - |
|--|------------------|

| | | |
|--|---|-------------------------|
| | Title : SMOOTH PLASTIC DUCT 5.563" for External and Internal Unbonded Systems - Standard fit for 31AMTS15 Alternate 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 |

| | | | |
|-------------------|---|-------------------------------|----------|
| Date : 10/08/2019 | Dimensions : <small>INCH [mm]</small> <small>mm FOR REFERENCE ONLY</small> | Part # : E-IU-31-07-08 | Code : - |
|-------------------|---|-------------------------------|----------|

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 provisions of the Law.



SECTION A-A

INSTALLATION

Preparing the duct

1. Scrape the duct up to 0.4" (10mm) beyond the insertion length of the fitting.
2. Clean the welding area and let it dry.
3. Insert the duct ends straight into the fitting for the correct length.
4. Install the aligners in order to keep straight position.

Welding Process

5. Connect the welding cables to the electrofusion coupler connectors and enter the welding parameters in the device.
6. At the end of the welding cycle, disconnect the cables and wait for the cooling.
7. Remove the aligners.

NOTE:

- The United States (US) coupler must be used with the corresponding US duct; the European (EU) coupler must be used with the corresponding EU duct;
- The installation procedure is general; reference to manufacturer's instruction manual for the detailed installation instructions;
- This drawing is not intended for manufacturing purposes;
- Coupler meets FDoT requirements (Par. 2.2.1.5 Section 960):

- 150 psi rated
- minimum cell class of 445574C as per ASTM D3350
- minimum OIT of 40 minutes as per ASTM D3895

| Rev. | Date | Description | Drawn | Checked |
|------|----------|--|-------|---------|
| A | 10/08/19 | Updated with measures for US and European versions | L.C. | T.C. |
| 0 | 04/26/18 | First issue | L.C. | T.C. |

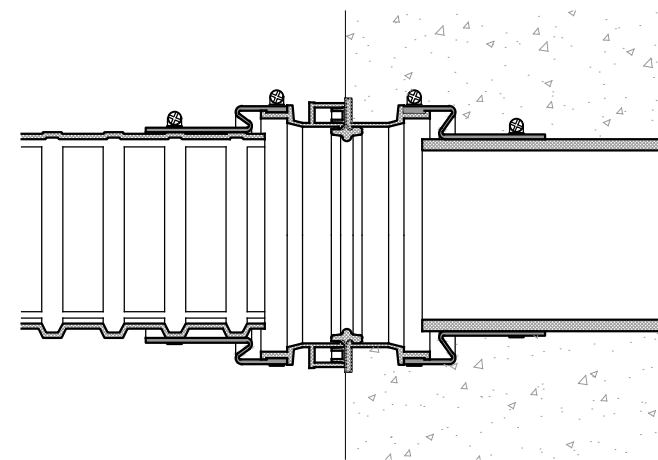
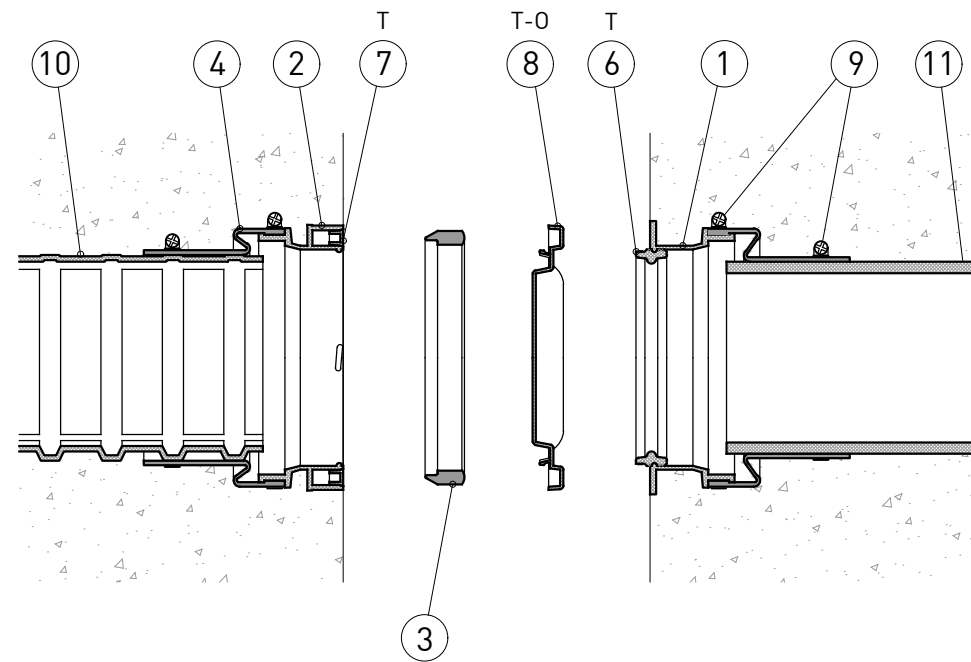
| | |
|--|------------------|
| Material : High Density Polyethylene- according to ASTM D3350 | Treatment : - |
|--|------------------|

| | | |
|--|---|--|
| | Title : | |
| | ELECTROFUSION COUPLER for 5.563" HDPE DUCT CONNECTION Standard fit for 31AMTS15 Alternate fit for 27AMTS15 | |

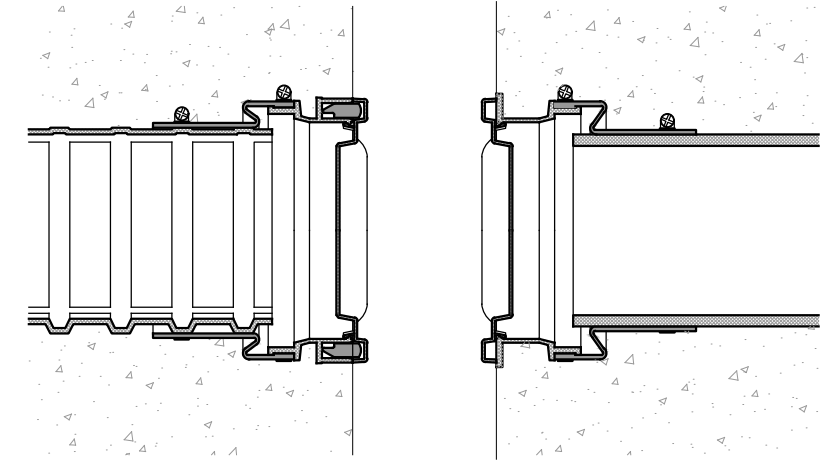
| | | |
|---|------------------|---------------------|
| TENSA AMERICA LLC - www.tensaamerica.com - PHONE: +1 305-866-9917 1111 KANE CONCOURSE, S.TE 200 - BAY HARBOR ISLAND - 33154 FL | Drawn : L.CIVATI | Checked : T.CICCONE |
|---|------------------|---------------------|

| | | | |
|-------------------|---|------------------------|----------|
| Date : 10/08/2019 | Dimensions : <small>INCH [mm] mm FOR REFERENCE ONLY</small> | Part # : E-IU-31-07-12 | Code : - |
|-------------------|---|------------------------|----------|

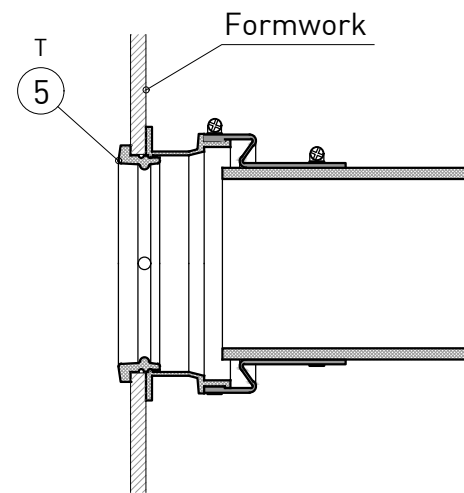
Document Property of TENSA AMERICA LLC
This drawing contains proprietary information restricted solely for use on this project and may not be reproduced in whole or in part. For any other use without the expressed written permission of TENSA AMERICA LLC, the company will safeguard its rights according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



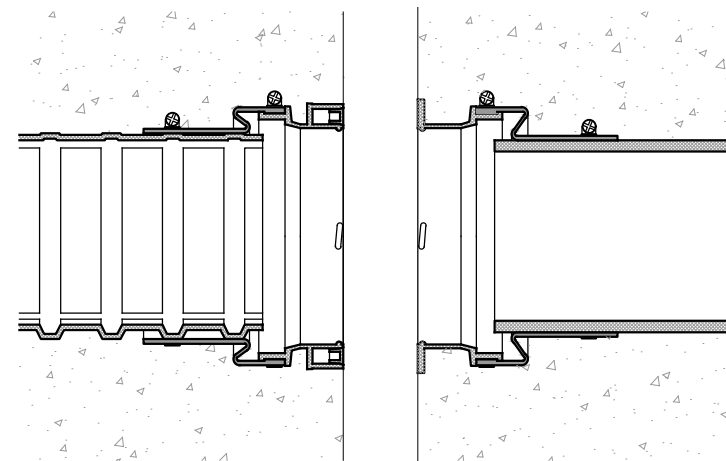
PHASE B
match-cast coupler connection



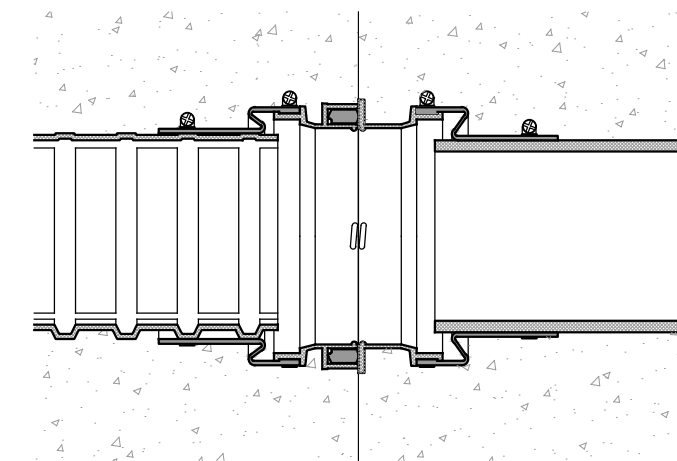
PHASE D
gasket placing and protection



PHASE A
bulkhead coupler connection



PHASE C
segments detachment



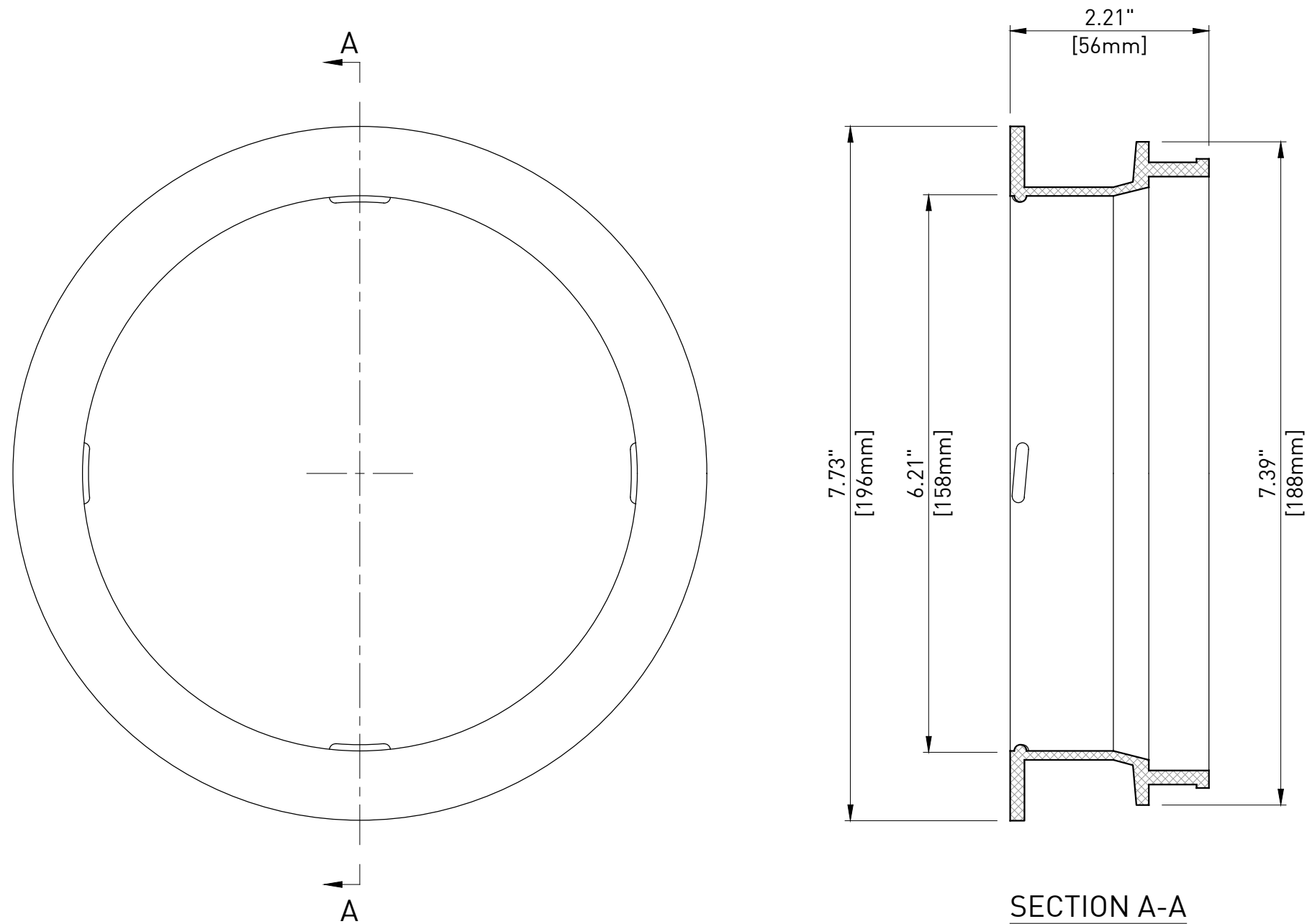
PHASE E
segments connection

| BILL OF MATERIALS | | | |
|-------------------|---------------|----------------------|---|
| ITEM | PART # | DESCRIPTION | MATERIAL |
| 1 | XX-07-03-01 | Bulkhead Coupler | Polypropylene - according to ASTM D4101 |
| 2 | XX-07-03-02 | Match-Cast Coupler | Polypropylene - according to ASTM D4101 |
| 3 | XX-07-03-03 | Sealing Gasket | TPR Blend - according to FDoT Tab.2.2.1.7-1 Sec.960 |
| 4 | XX-07-03-04 | Boot | TPR Blend - according to FDoT Tab.2.2.1.7-1 Sec.960 |
| 5 | XX-07-03-05 | Bulkhead load plug | Nylon |
| 6 | XX-07-03-06 | Match-Cast Load Plug | Nylon |
| 7 | XX-07-03-07 | Gasket Blockout | Polypropylene - according to ASTM D4101 |
| 8 | XX-07-03-08 | Storage Cap | Polypropylene - according to ASTM D4101 |
| 9 | 00-10-00 | Band Clamp | Stainless Steel GR316 - according to ASTM A240 |
| 10 | I-XX-07-00 | Corrugated Duct | Polypropylene - according to ASTM D4101 |
| 11 | E-IU-XX-07-08 | Smooth Plastic Duct | High Density Polyethylene - according to ASTM D3350 |

NOTE:


- Reference to manufacturer's installation manual for the detailed installation instructions;
- The representation of both smooth and corrugated duct in the same coupler is purely representative;
- Segmental duct coupler meets FDoT requirements (Par. 2.2.1.6 and 3.2.1 Section 960)
- Components marked with "T" on the drawing are temporary, components marked with "O" are optional
- In the beside table "XX" stands for the system dimension

| | | | | |
|---|---|---|---------------------|---------|
| 0 | 03/20/19 | First issue | L.C. | T.C. |
| Rev. | Date | Description | Drawn | Checked |
| Material : See proper drawing | | | Treatment : - | |
| | | Title : GTI SEGMENTAL DUCT COUPLER for corrugated duct and smooth pipe | | |
| <small>TENSA AMERICA LLC - www.tensaamerica.com - PHONE: +1 305-866-9917 1111 KANE CONCOURSE, S. TE 200 - BAY HARBOR ISLAND - 33154 FL</small> | | Drawn : L.CIVATI | Checked : T.CICCONE | |
| Date : 03/20/2019 | Dimensions : <small>INCH (mm) mm FOR REFERENCE ONLY</small> | Part # : XX-07-03 | Code : - | |
| <small>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 provisions of the Law.</small> | | | | |

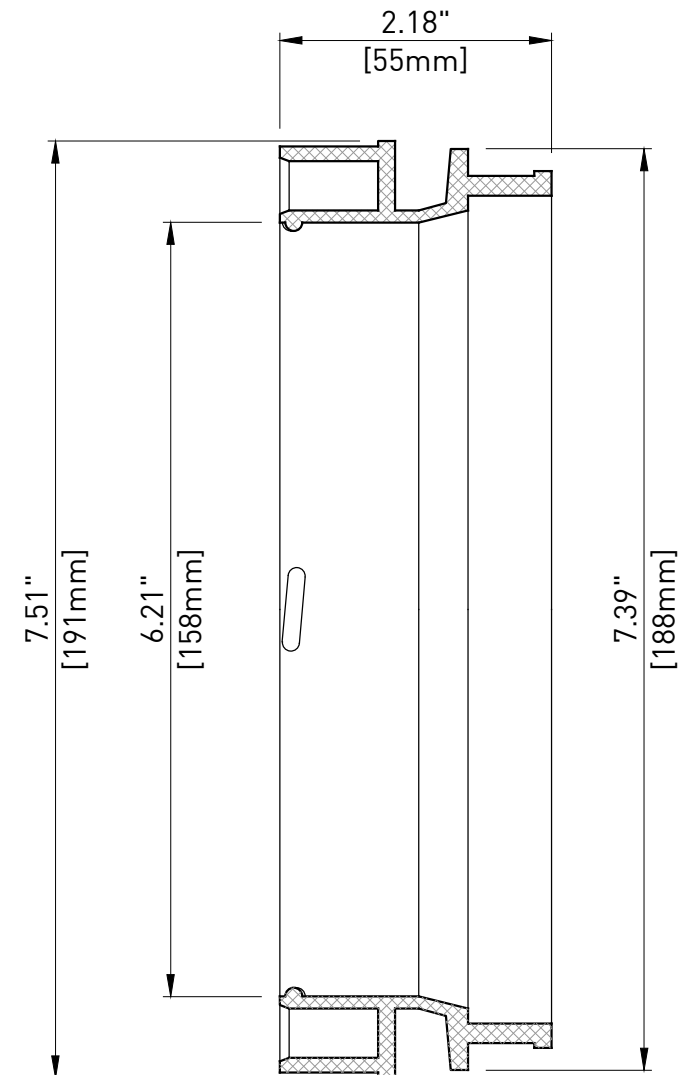
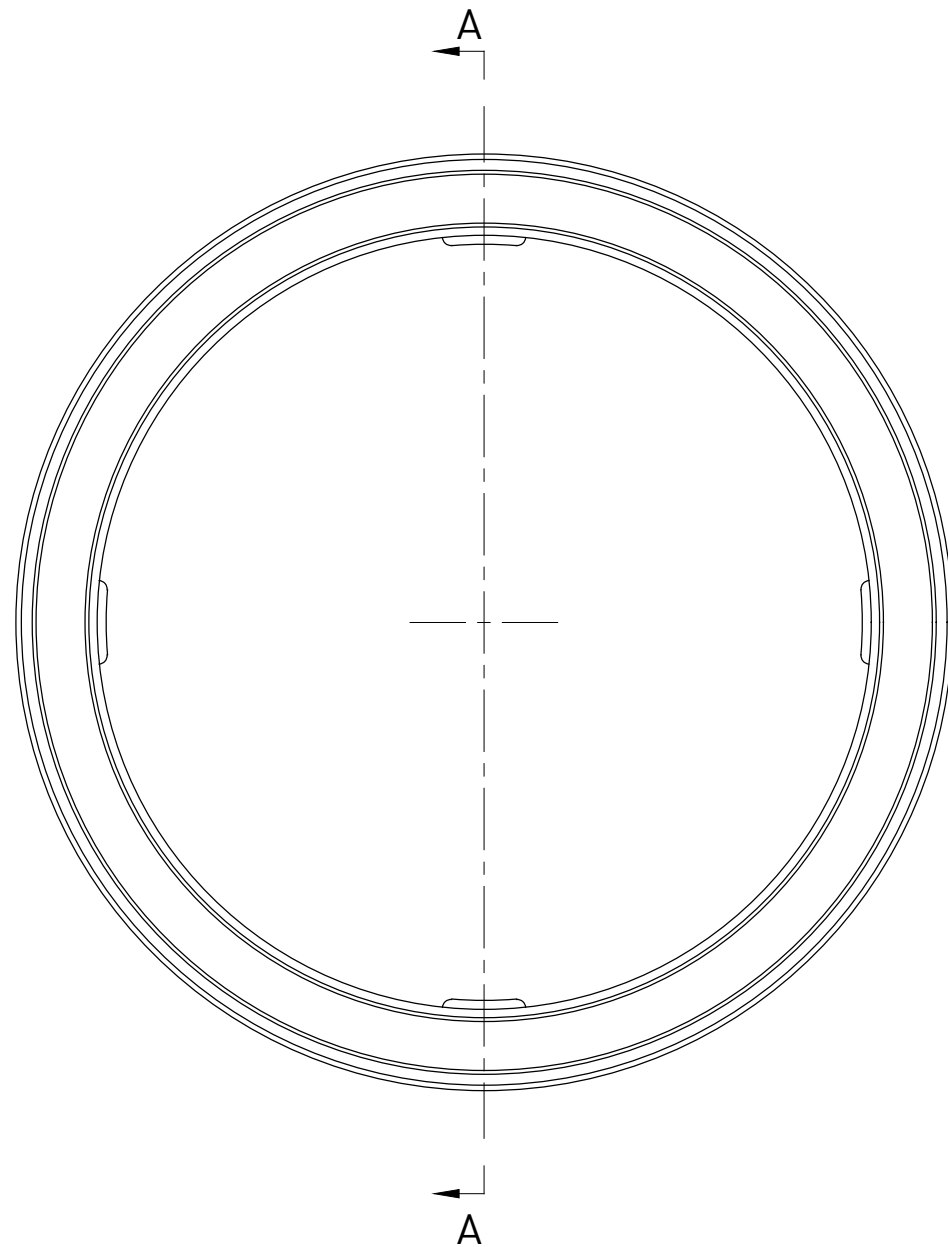


NOTE:

- All dimensions are measured;
- This drawing is not intended for manufacturing purposes.

| | | | |
|---|---|---|----------------------|
| Material : Polypropylene - according to ASTM D4101 | | Treatment : - | |
|  <small>TENSA AMERICA LLC - www.tensaamerica.com - PHONE: +1 305-866-9917 1111 KANE CONCOURSE, S.TE 200 - BAY HARBOR ISLAND - 33154 FL</small> | | Title : GTI SDC BULKHEAD COUPLER 5.125" for 5.125" GTI corrugated duct and 5.563" smooth duct Standard fit for 31AMTS15 Alternate fit for 27AMTS15 | |
| | | Drawn : L. CIVATI | Checked : T. CICCONE |
| Date : 03/20/2019 | Dimensions : <small>INCH [mm] mm FOR REFERENCE ONLY</small> | Part # : 31-07-03-01 | Code : 220531 |
| <small>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 provisions of the Law.</small> | | | |


| | | | | |
|------|----------|-------------|-------|---------|
| 0 | 03/20/19 | First issue | L.C. | T.C. |
| Rev. | Date | Description | Drawn | Checked |



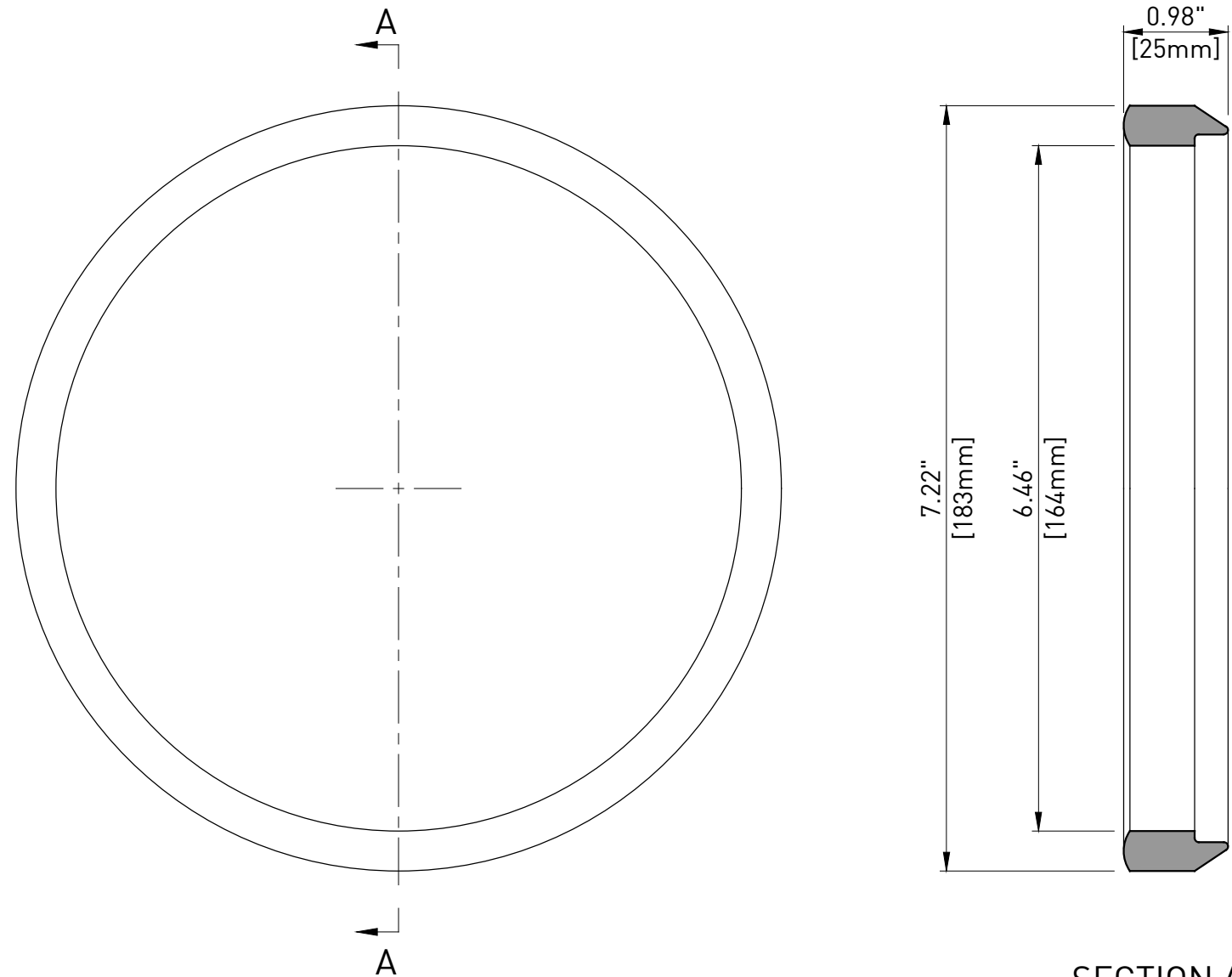
SECTION A-A

NOTE:

- All dimensions are measured;
- This drawing is not intended for manufacturing purposes.

| | | | |
|---|---|--|----------------------|
| Material : Polypropylene - according to ASTM D4101 | | Treatment : - | |
|  | | Title : GTI SDC MATCHCAST COUPLER 5.125" for 5.125" GTI corrugated duct and 5.563" smooth duct Standard fit for 31AMTS15 Alternate fit for 27AMTS15 | |
| | | TENZA AMERICA LLC - www.tensaamerica.com - PHONE: +1 305-866-9917 1111 KANE CONCOURSE, S.TE 200 - BAY HARBOR ISLAND - 33154 FL | |
| Date : 03/20/2019 | Dimensions : <small>INCH [mm]</small> <small>mm FOR REFERENCE ONLY</small> | Drawn : L. CIVATI | Checked : T. CICCONE |
| Date : 03/20/2019 | | Part # : 31-07-03-02 | Code : 220532 |
| <small>Document Property of TENSA AMERICA LLC</small> <small>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 provisions of the Law.</small> | | | |


| | | | | |
|------|----------|-------------|-------|---------|
| 0 | 03/20/19 | First issue | L.C. | T.C. |
| Rev. | Date | Description | Drawn | Checked |



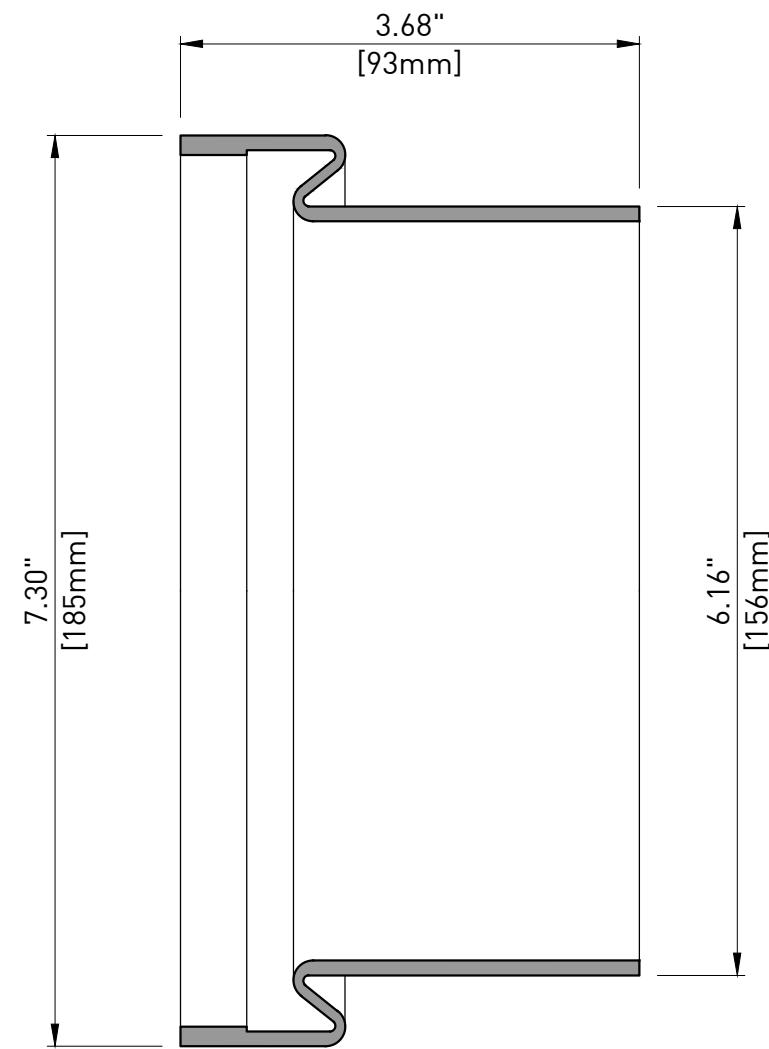
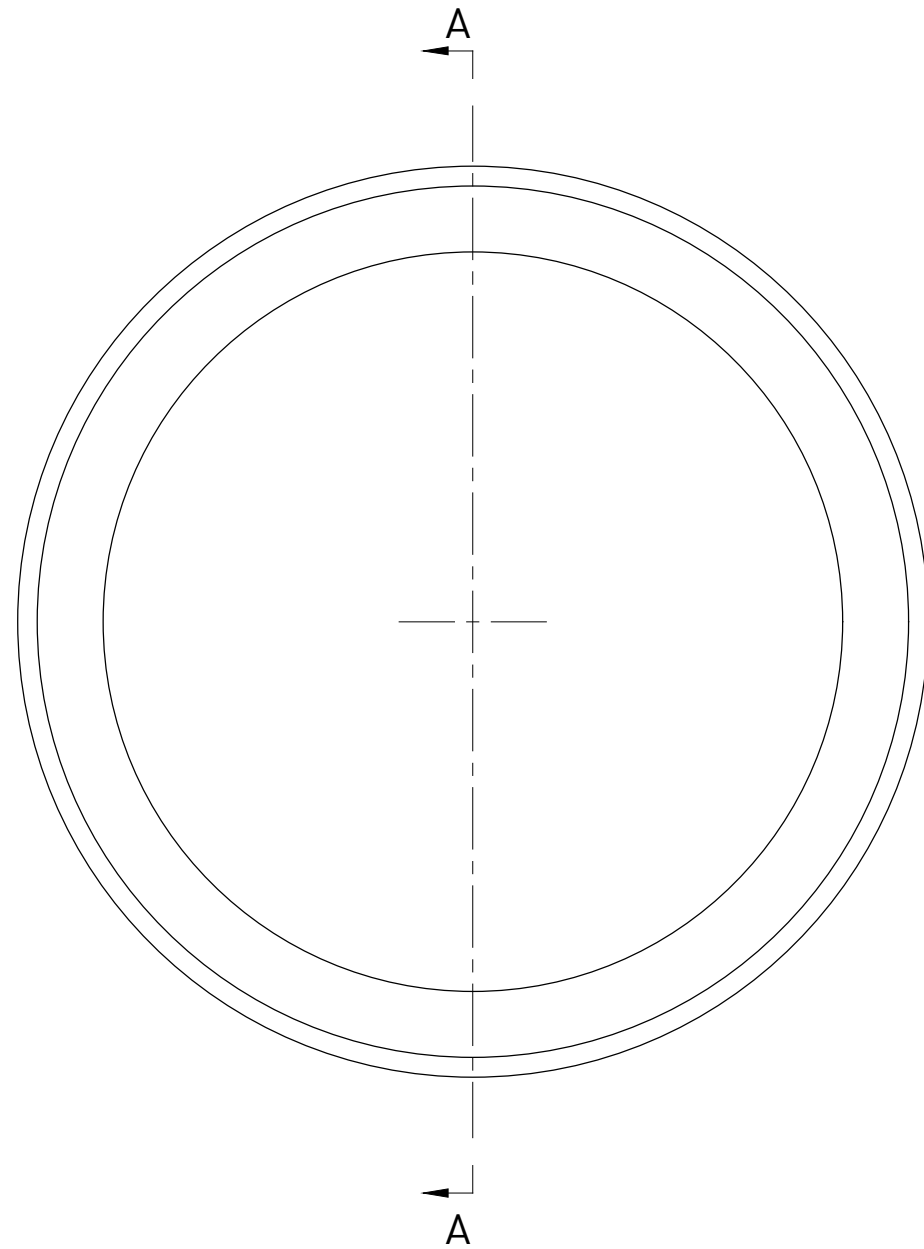
SECTION A-A

NOTE:

- All dimensions are measured;
- This drawing is not intended for manufacturing purposes.

| | | | |
|---|---|---|---|
| Material : TPR Blend - according to FDOT Tab.2.2.1.7-1 Sec.960 | | Treatment : - | |
|  | | Title : GTI SDC SEALING GASKET 5.125" for 5.125" GTI corrugated duct and 5.563" smooth duct Standard fit for 31AMTS15 Alternate 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 : 03/20/2019 | Dimensions : <small>INCH [mm]</small> <small>mm FOR REFERENCE ONLY</small> | Part # : 31-07-03-03 | Code : 220533 |
| <small>Document Property of TENSA AMERICA LLC</small> <small>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 provisions of the Law.</small> | | | |


| Rev. | Date | Description | Drawn | Checked |
|------|----------|-------------|-------|---------|
| 0 | 03/20/19 | First issue | L.C. | T.C. |



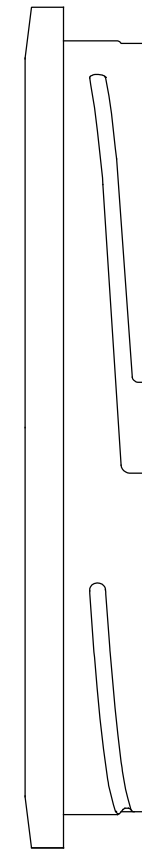
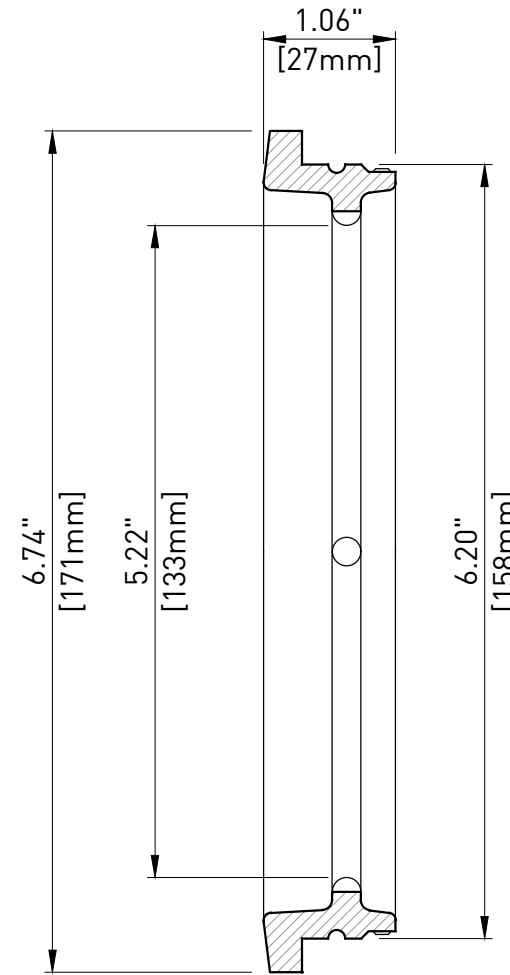
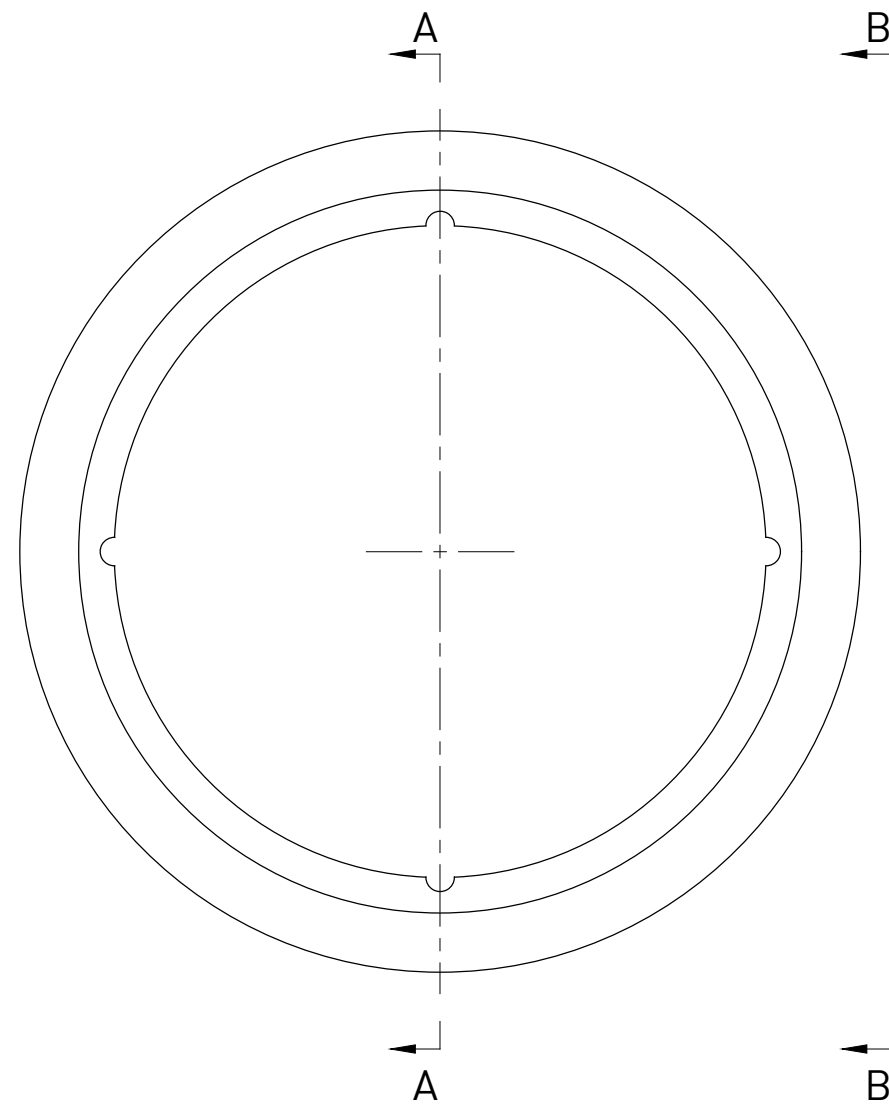
SECTION A-A

NOTE:

- All dimensions are measured;
- This drawing is not intended for manufacturing purposes.

| | | | |
|---|--|--|---|
| Material : TPR Blend - according to FDoT Tab.2.2.1.7-1 Sec.960 | | Treatment : - | |
|  | | Title : GTI SDC BOOT 5.125" for 5.125" GTI corrugated duct and 5.563" smooth duct Standard fit for 31AMTS15 Alternate 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 : 03/20/2019 | Dimensions : $\frac{\text{INCH [mm]}}{\text{mm}}$ FOR REFERENCE ONLY | Part # : 31-07-03-04 | Code : 220534 |
| 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 provisions of the Law. | | | |

| Rev. | Date | Description | Drawn | Checked |
|------|----------|-------------|-------|---------|
| 0 | 03/20/19 | First issue | L.C. | T.C. |




SECTION A-A

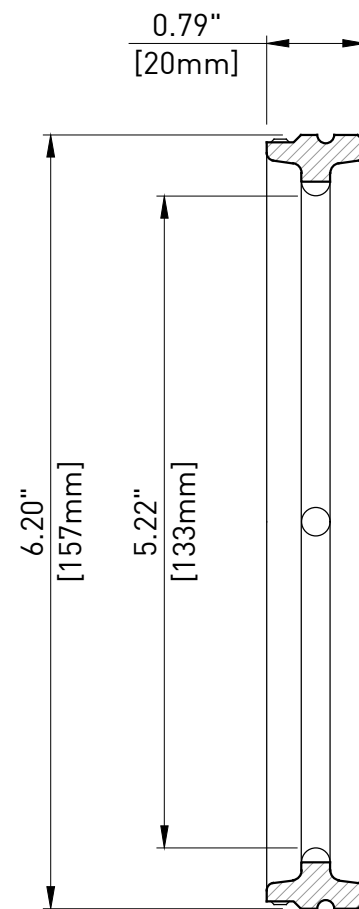
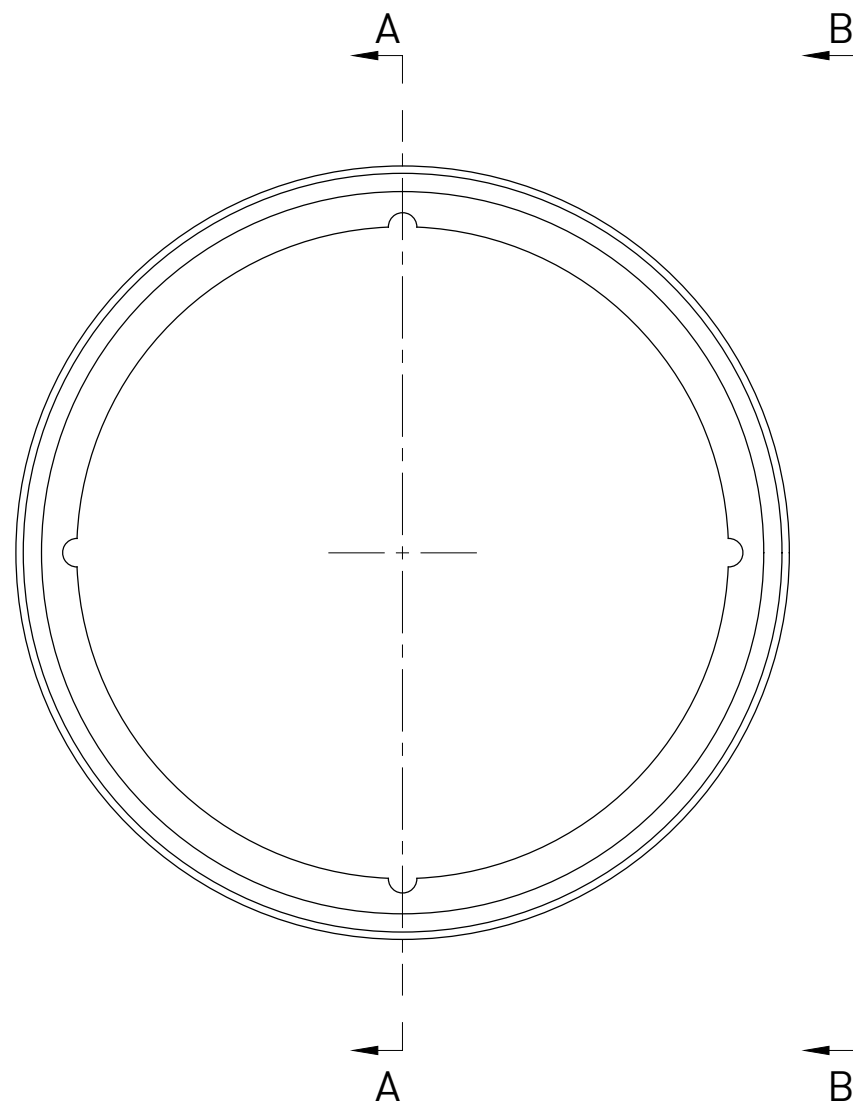
VIEW B-B

NOTE:

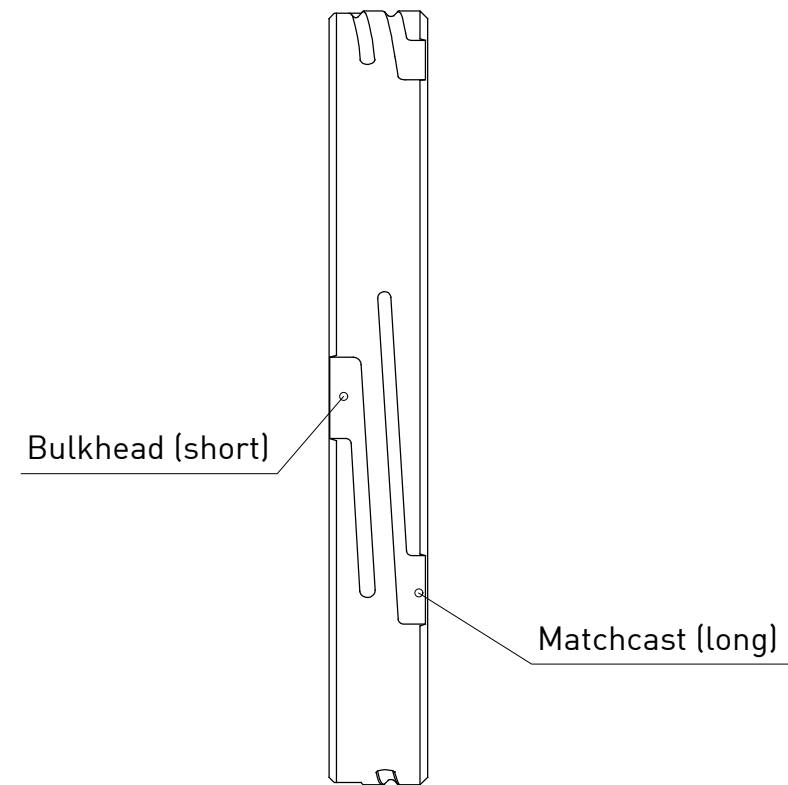
- All dimensions are measured;
- This drawing is not intended for manufacturing purposes;
- Temporary item.

| | | | |
|--|---|---|----------------------|
| Material : Nylon | | Treatment : - | |
|  | | Title : GTI SDC BULKHEAD LOAD PLUG 5.125" for 5.125" GTI corrugated duct and 5.563" smooth duct Standard fit for 31AMTS15 Alternate fit for 27AMTS15 | |
| | | TENZA AMERICA LLC - www.tensaamerica.com - PHONE: +1 305-866-9917 1111 KANE CONCOURSE, S.TE 200 - BAY HARBOR ISLAND - 33154 FL | |
| Date : 03/20/2019 | Dimensions : <small>INCH [mm]</small> <small>mm FOR REFERENCE ONLY</small> | Drawn : L. CIVATI | Checked : T. CICCONE |
| Date : 03/20/2019 | | Part # : 31-07-03-05 | Code : 220543 |
| Document Property of TENSA AMERICA LLC | | | |
| <small>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 provisions of the Law.</small> | | | |

| | | | | |
|------|----------|-------------|-------|---------|
| 0 | 03/20/19 | First issue | L.C. | T.C. |
| Rev. | Date | Description | Drawn | Checked |



SECTION A-A



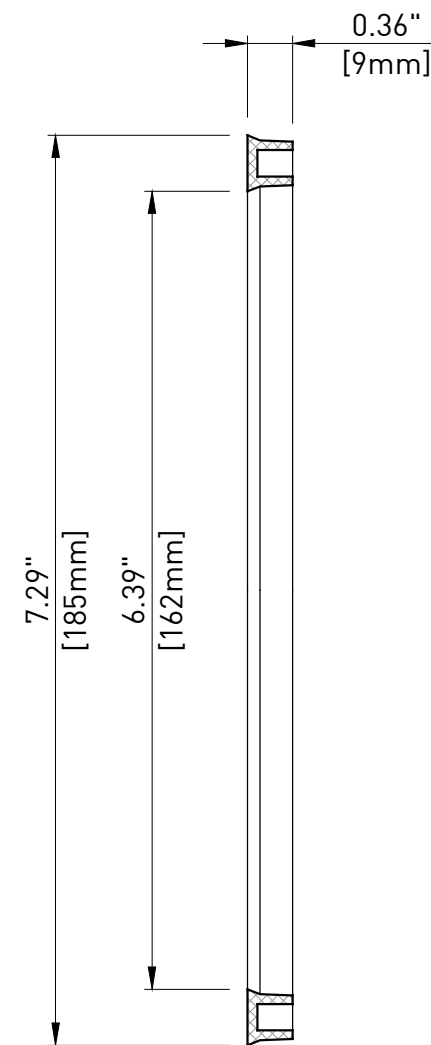
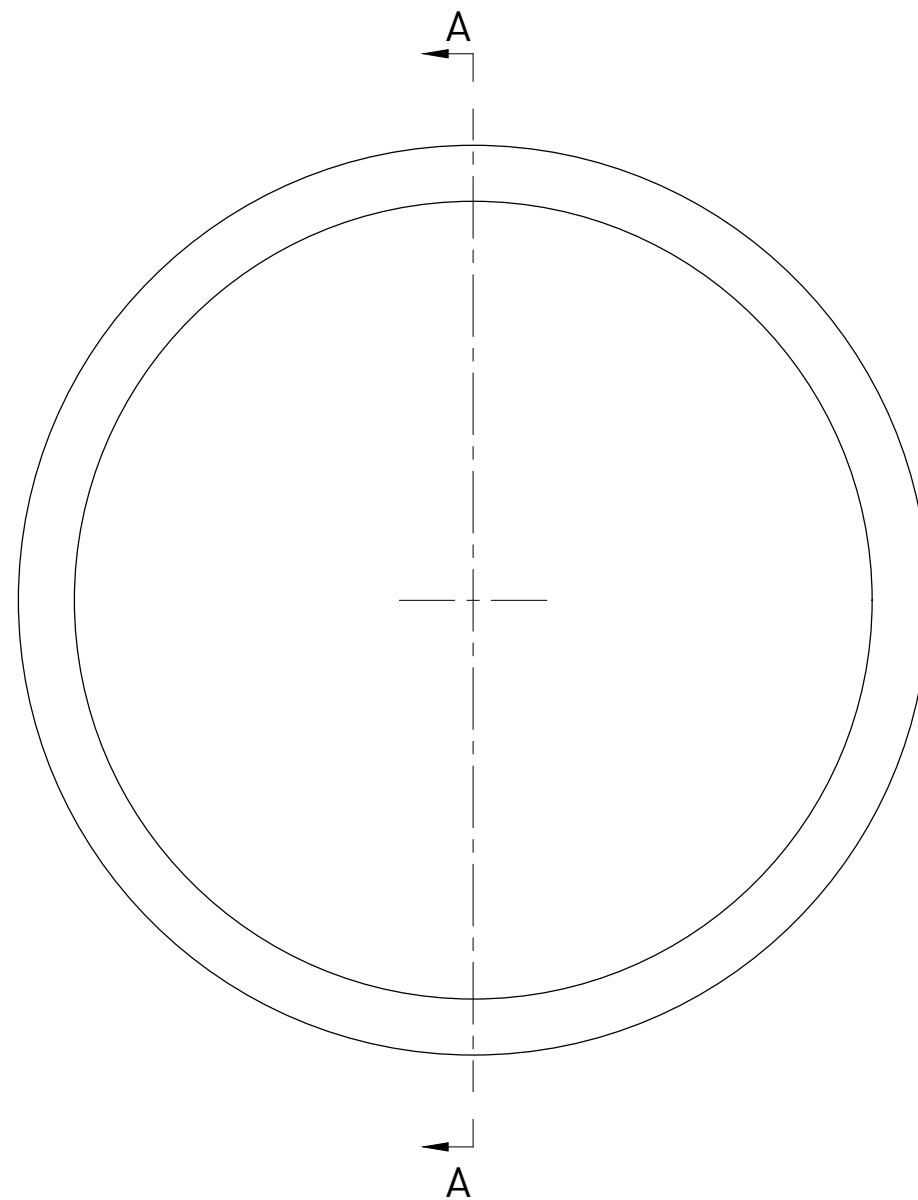
VIEW B-B

NOTE:

- All dimensions are measured;
- This drawing is not intended for manufacturing purposes;
- Temporary item.

| | | | |
|---|---|--|---|
| Material : Nylon | | Treatment : - | |
| | | Title : GTI SDC MATCHCAST LOAD PLUG 5.125" for 5.125" GTI corrugated duct and 5.563" smooth duct Standard fit for 31AMTS15 Alternate 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 : 03/20/2019 | Dimensions : <small>INCH [mm]</small> <small>mm FOR REFERENCE ONLY</small> | Part # : 31-07-03-06 | Code : 220546 |
| <small>Document Property of TENSA AMERICA LLC</small> <small>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 provisions of the Law.</small> | | | |


| | | | | |
|------|----------|-------------|-------|---------|
| 0 | 03/20/19 | First issue | L.C. | T.C. |
| Rev. | Date | Description | Drawn | Checked |



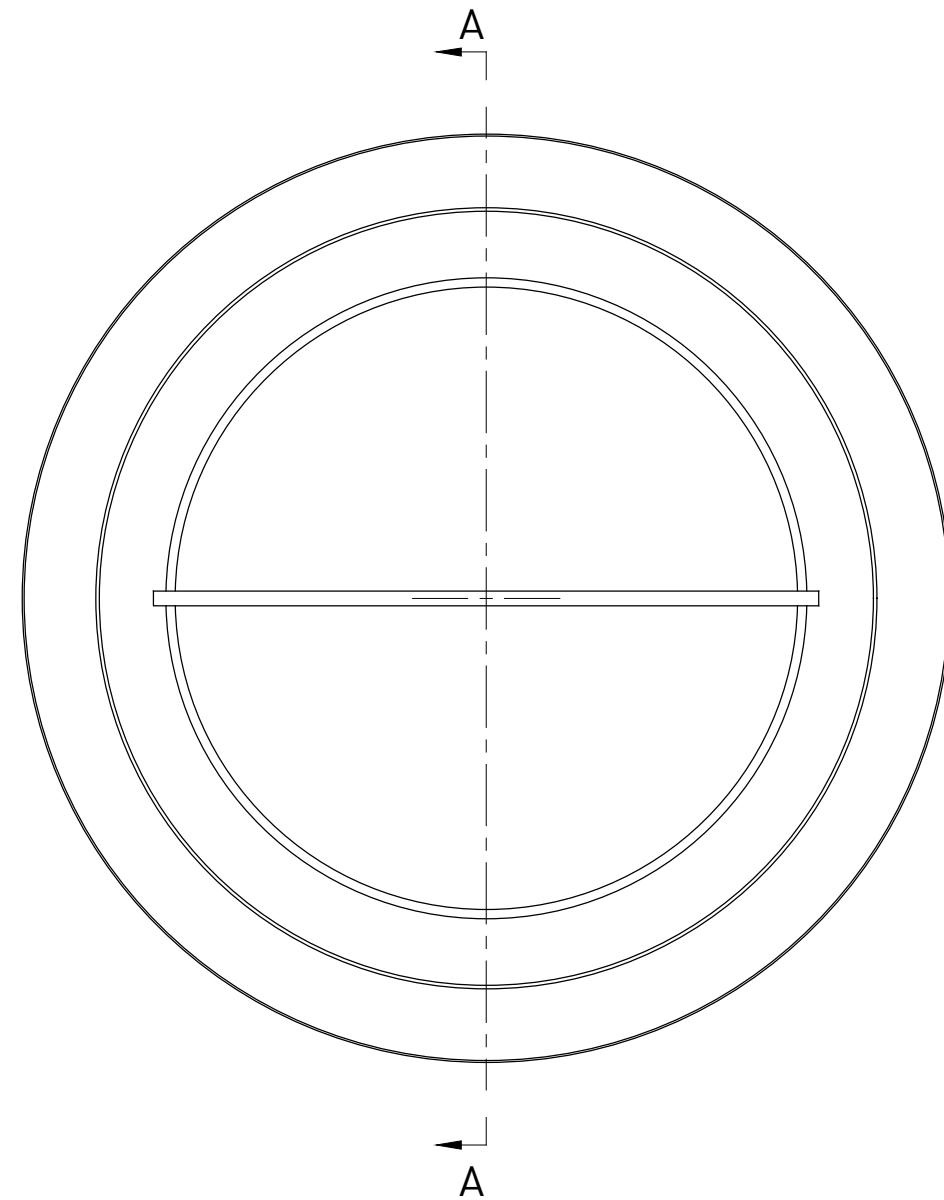
SECTION A-A

NOTE:

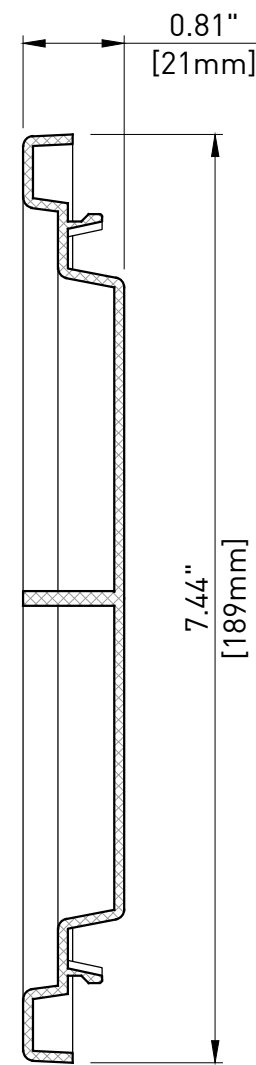
- All dimensions are measured;
- This drawing is not intended for manufacturing purposes;
- Temporary item.

| | | | |
|---|---|--|----------------------|
| Material : Polypropylene - according to ASTM D4101 | | Treatment : - | |
|  | | Title : GTI SDC GASKET BLOCKOUT 5.125" for 5.125" GTI corrugated duct and 5.563" smooth duct Standard fit for 31AMTS15 Alternate fit for 27AMTS15 | |
| | | TENZA AMERICA LLC - www.tensaamerica.com - PHONE: +1 305-866-9917 1111 KANE CONCOURSE, S. TE 200 - BAY HARBOR ISLAND - 33154 FL | |
| Date : 03/20/2019 | Dimensions : <small>INCH [mm]</small> <small>mm FOR REFERENCE ONLY</small> | Drawn : L. CIVATI | Checked : T. CICCONE |
| Date : 03/20/2019 | | Part # : 31-07-03-07 | Code : 220539 |
| <small>Document Property of TENSA AMERICA LLC</small> <small>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 provisions of the Law.</small> | | | |

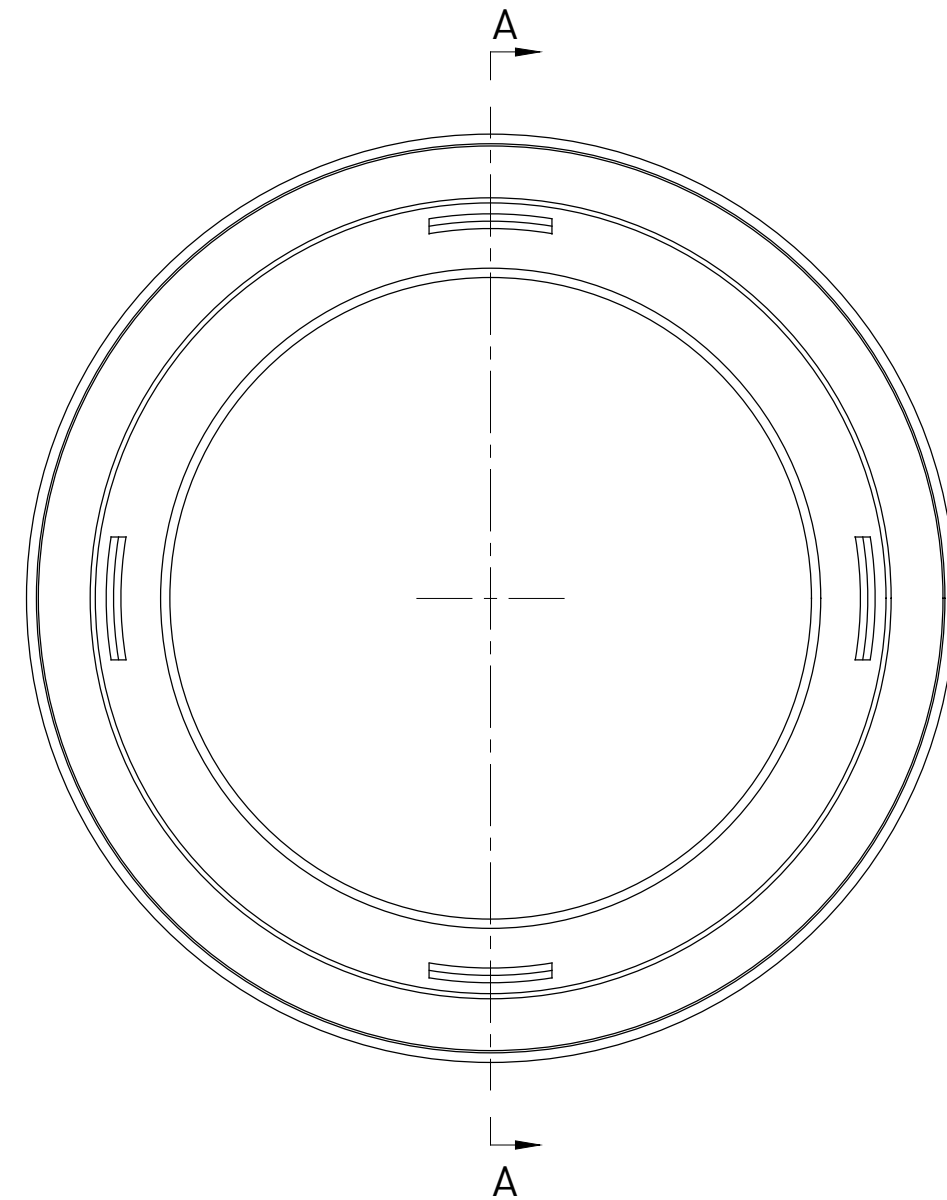
| | | | | |
|------|----------|-------------|-------|---------|
| 0 | 03/20/19 | First issue | L.C. | T.C. |
| Rev. | Date | Description | Drawn | Checked |



FRONT VIEW




SECTION A-A



REAR VIEW

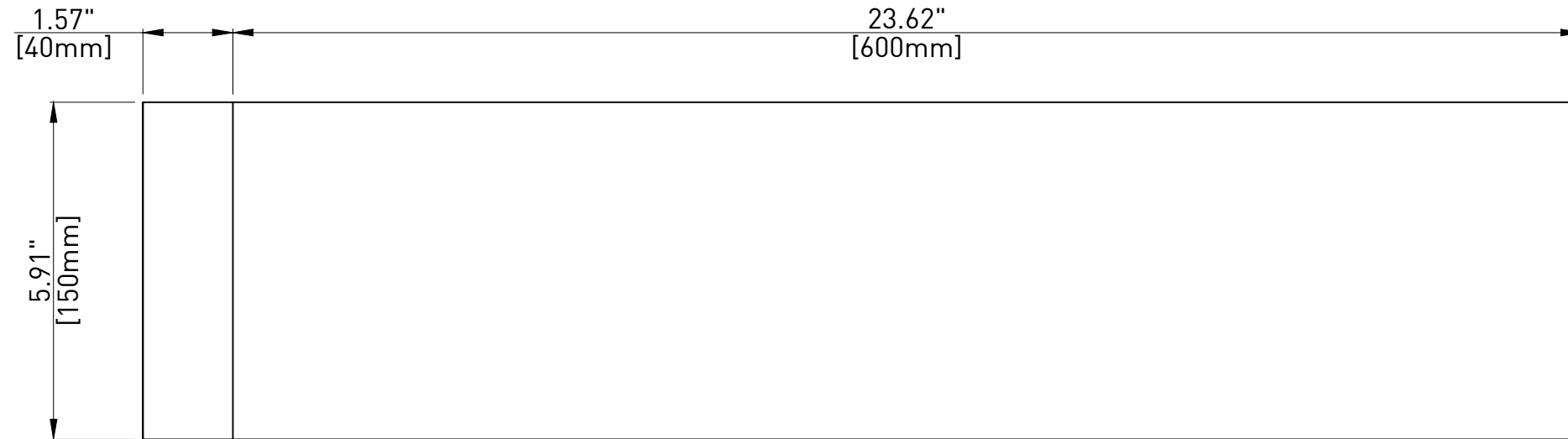
NOTE:

- All dimensions are measured;
- This drawing is not intended for manufacturing purposes;
- Temporary item.

| | | | |
|---|---|--|----------------------|
| Material : Polypropylene - according to ASTM D4101 | | Treatment : - | |
|  | | Title : GTI SDC STORAGE CAP 5.125" for 5.125" GTI corrugated duct and 5.563" smooth duct Standard fit for 31AMTS15 Alternate 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 | |
| Date : 03/20/2019 | Dimensions : <small>INCH [mm]</small> <small>mm FOR REFERENCE ONLY</small> | Drawn : L. CIVATI | Checked : T. CICCONE |
| Part # : 31-07-03-08 | | Code : 220547 | |
| <small>Document Property of TENSA AMERICA LLC</small> <small>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 provisions of the Law.</small> | | | |

| | | | | |
|------|----------|-------------|-------|---------|
| 0 | 03/20/19 | First issue | L.C. | T.C. |
| Rev. | Date | Description | Drawn | Checked |

UNWRAPPED PLAN VIEW



UNWRAPPED LATERAL VIEW



NOTE:

- Thickness is type L, i.e. 0.035" [0.9 mm] backing + 0.043" [1.1 mm] adhesive;
- This drawing is not intended for manufacturing purposes;
- Heat shrink sleeve meets or exceeds FDoT requirements (Table 2.2.1.8-1 Section 960);
- For the installation make reference to manufacturer procedure

| Rev. | Date | Description | Drawn | Checked |
|------|----------|------------------------------------|-------|---------|
| A | 03/06/20 | Width reduction from 300 to 150 mm | L.C. | T.C. |
| 0 | 04/27/18 | First issue | L.C. | T.C. |

| | | | |
|---|---|--|---------------------|
| Material : Coated Polyolefin Backing - according to FDoT Tab.2.2.1.8-1 Sec.960 | | Treatment : - | |
|  <p>TENSA AMERICA GRUPPO DE ECCHER</p> | | Title : CANUSA-CPS HIGH TEMPERATURE HEAT SHRINK SLEEVE Standard fit for 27AMTS15 and 31AMTS15 External and Internal Unbonded Systems | |
| | | TENZA AMERICA LLC - www.tensaamerica.com - PHONE: +1 305-866-9917 1111 KANE CONCOURSE, S.TE 200 - BAY HARBOR ISLAND - 33154 FL | |
| Date : 03/06/2020 | Dimensions : <small>INCH [mm] mm FOR REFERENCE ONLY</small> | Drawn : L.CIVATI | Checked : T.CICCONE |
| Part # : E-IU-27-07-13 | | Code : KLNN-125-150-BK | |
| <p align="center"><small>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 provisions of the Law.</small></p> | | | |