**SECTION A-A**

**front inspection and welding**

**NOTE:**
- 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.

**Components and Processes:**
- Epoxy grout shall be used to fill recesses: make reference to FDoT standard plans index 462-003 for post-tensioning anchorage and tendon inspection.
- 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 recesses: make reference to FDoT standard plans index 462-003 for post-tensioning anchorage and tendon inspection.
- Epoxy grout shall be used to fill recesses: make reference to FDoT standard plans index 462-003 for post-tensioning anchorage and tendon inspection.

**End Preparation:**
- Fill hole with non-shrink grout after grout has hardened and tendon inspected.
- Replace 3/4" pipe (00-03-01) with 3/4" plug (00-01-05) after grout has hardened and tendon inspected.

**INSTRUCTION:**
- Install wedge plate (00-01-03) with 1/2" skirted on the grout hole to facilitate the compression of the O-ring.
- The position of the spiral rebar (SR) shall be secured to the pocket former.
- Seal unused port in AN.
- After completion of concrete placement, remove the pocket former and prove that duct is clear of any obstructions or damage and that all grout vents are free and secured.
- All vents and grouting inlets/outlets have to be sealed.
- Stressing operation shall be executed according to the engineer's form and requires the simultaneous reading of the tendons to within ±1% of the theoretical tendon force in the tendon.

**INSTALLATION:**
- Stressing operation shall be executed according to the engineer's form and requires the simultaneous reading of the tendons to within ±1% of the theoretical tendon force in the tendon.
- Stressing operation shall be executed according to the engineer's form and requires the simultaneous reading of the tendons to within ±1% of the theoretical tendon force in the tendon.

**Epoxy Grout:**
- 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

**MISCELLANEOUS:**
- Commercially available thread seal tape.
- Commercially available thread seal tape.
- Commercially available thread seal tape.

---

**BILL OF MATERIALS**

<table>
<thead>
<tr>
<th>ITEM</th>
<th>PART #</th>
<th>DESCRIPTION</th>
<th>MATERIAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>27-01-01</td>
<td>Protection Cap</td>
<td>Nylon S-PVDF1 - according to ASTM D3499</td>
</tr>
<tr>
<td>2</td>
<td>27-01-01</td>
<td>Protection Cap White</td>
<td>Stainless Steel MarSeal - according to ASTM F2793</td>
</tr>
<tr>
<td>3</td>
<td>27-01-01</td>
<td>Protection Cap Red</td>
<td>304 SS - according to ASME B16.34 Sect.560</td>
</tr>
<tr>
<td>4</td>
<td>00-01-06</td>
<td>NPT Pipe Plug φ1/2&quot;</td>
<td>SCH40 PVC or SCH80 Steel</td>
</tr>
<tr>
<td>5</td>
<td>00-01-06</td>
<td>NPT Ball Valve φ1/2&quot;</td>
<td>PVC 150 psi rated</td>
</tr>
<tr>
<td>6</td>
<td>00-01-06</td>
<td>NPT Pipe Plug φ1/2&quot;</td>
<td>SCH40 PVC or SCH80 Steel</td>
</tr>
<tr>
<td>7</td>
<td>27-01-03</td>
<td>Wedge Plate</td>
<td>Steel AISI 4130 Normalized</td>
</tr>
<tr>
<td>8</td>
<td>00-02-62</td>
<td>Anchor</td>
<td>Ductile iron ASTM A492 M-15-80-10 (Swivel) according to ASTM A492</td>
</tr>
<tr>
<td>9</td>
<td>00-02-62</td>
<td>NPT Ball Valve φ3/4&quot;</td>
<td>PVC 150 psi rated</td>
</tr>
<tr>
<td>10</td>
<td>00-02-62</td>
<td>NPT Plug φ3/4&quot;</td>
<td>High Density Polyethylene - according to ASTM D3350</td>
</tr>
<tr>
<td>11</td>
<td>00-02-62</td>
<td>NPT Plug φ1&quot;</td>
<td>Steel PVC - according to ASTM A453 Heat treatment</td>
</tr>
<tr>
<td>12</td>
<td>00-02-62</td>
<td>NPT Plug φ2&quot;</td>
<td>Steel PVC - according to ASTM A453 Heat treatment</td>
</tr>
<tr>
<td>13</td>
<td>00-02-62</td>
<td>NPT Plug φ4&quot;</td>
<td>Steel PVC - according to ASTM A453 Heat treatment</td>
</tr>
<tr>
<td>14</td>
<td>00-02-62</td>
<td>NPT Plug φ6&quot;</td>
<td>Steel PVC - according to ASTM A453 Heat treatment</td>
</tr>
<tr>
<td>15</td>
<td>00-02-62</td>
<td>NPT Plug φ8&quot;</td>
<td>Steel PVC - according to ASTM A453 Heat treatment</td>
</tr>
<tr>
<td>16</td>
<td>00-02-62</td>
<td>NPT Plug φ12&quot;</td>
<td>Steel PVC - according to ASTM A453 Heat treatment</td>
</tr>
<tr>
<td>17</td>
<td>00-02-62</td>
<td>NPT Plug φ16&quot;</td>
<td>Steel PVC - according to ASTM A453 Heat treatment</td>
</tr>
<tr>
<td>18</td>
<td>00-02-62</td>
<td>NPT Plug φ20&quot;</td>
<td>Steel PVC - according to ASTM A453 Heat treatment</td>
</tr>
<tr>
<td>19</td>
<td>00-02-62</td>
<td>NPT Plug φ24&quot;</td>
<td>Steel PVC - according to ASTM A453 Heat treatment</td>
</tr>
<tr>
<td>20</td>
<td>00-02-62</td>
<td>NPT Plug φ30&quot;</td>
<td>Steel PVC - according to ASTM A453 Heat treatment</td>
</tr>
<tr>
<td>21</td>
<td>00-02-62</td>
<td>NPT Plug φ36&quot;</td>
<td>Steel PVC - according to ASTM A453 Heat treatment</td>
</tr>
<tr>
<td>22</td>
<td>00-02-62</td>
<td>NPT Plug φ40&quot;</td>
<td>Steel PVC - according to ASTM A453 Heat treatment</td>
</tr>
<tr>
<td>23</td>
<td>00-02-62</td>
<td>NPT Plug φ48&quot;</td>
<td>Steel PVC - according to ASTM A453 Heat treatment</td>
</tr>
<tr>
<td>24</td>
<td>00-02-62</td>
<td>NPT Plug φ56&quot;</td>
<td>Steel PVC - according to ASTM A453 Heat treatment</td>
</tr>
<tr>
<td>25</td>
<td>00-02-62</td>
<td>NPT Plug φ60&quot;</td>
<td>Steel PVC - according to ASTM A453 Heat treatment</td>
</tr>
<tr>
<td>26</td>
<td>00-02-62</td>
<td>NPT Plug φ64&quot;</td>
<td>Steel PVC - according to ASTM A453 Heat treatment</td>
</tr>
<tr>
<td>27</td>
<td>00-02-62</td>
<td>NPT Plug φ72&quot;</td>
<td>Steel PVC - according to ASTM A453 Heat treatment</td>
</tr>
<tr>
<td>28</td>
<td>00-02-62</td>
<td>NPT Plug φ80&quot;</td>
<td>Steel PVC - according to ASTM A453 Heat treatment</td>
</tr>
<tr>
<td>29</td>
<td>00-02-62</td>
<td>NPT Plug φ96&quot;</td>
<td>Steel PVC - according to ASTM A453 Heat treatment</td>
</tr>
<tr>
<td>30</td>
<td>00-02-62</td>
<td>NPT Plug φ100&quot;</td>
<td>Steel PVC - according to ASTM A453 Heat treatment</td>
</tr>
<tr>
<td>31</td>
<td>00-02-62</td>
<td>NPT Plug φ120&quot;</td>
<td>Steel PVC - according to ASTM A453 Heat treatment</td>
</tr>
<tr>
<td>32</td>
<td>00-02-62</td>
<td>NPT Plug φ150&quot;</td>
<td>Steel PVC - according to ASTM A453 Heat treatment</td>
</tr>
<tr>
<td>33</td>
<td>00-02-62</td>
<td>NPT Plug φ180&quot;</td>
<td>Steel PVC - according to ASTM A453 Heat treatment</td>
</tr>
</tbody>
</table>

**SPIRAL:**

- Concrete cover must meet FDoT Structures Design Guidelines Section 1-4.2

**CONCRETE CLASS:**

- 2300 psi (16MPa)
- 3000 psi (21MPa)
- 4000 psi (28MPa)

**REFERENCES:**

- Steel GR270 - according to ASTM A416
- Steel AISI 12L14 - according to ASTM A108 + Heat treatment
- Stainless Steel GR316L - according to ASTM F593
- PVC 150 psi rated
- Polypropylene - according to ASTM D4101
- Polyethylene - according to ASTM D3350
- NBR - according to FDoT Tab.2.2.1.7-1 Sec.960

**CHECKED:** T. CICCONE

**DRAWN:** L. CIVATI

**TITLE:** INTERNAL PT SYSTEM ASSEMBLY for 27AMTS15 [27-0.6"]

**DRAWN:** L. CIVATI

**CHECKED:** T. CICCONE

**DATE:** 12/18/2018

**DESCRIPTION:**
- First issue

**T & R:**
- Material:
- Treatment:
- Code: -
PROTECTION CAP for 27AMTS15

Material: Nylon 6-PA66T - according to ASTM D698

Dimensions: INCH [mm] mm FOR REFERENCE ONLY

TENSA AMERICA LLC - www.tensaamerica.com - PHONE: +1 305-866-9917

1111 KANE CONCOURSE, S.TE 200 - BAY HARBOR ISLAND - 33154 FL

PROTECTION CAP
for 27AMTS15

Nylon S-PA0401 - according to ASTM D5989
27-01-00 

ANALOR CAP BOLTS for 27AMTS15

Material: Stainless Steel GR316L - according to ASTM F593

Title: PROTECTION CAP BOLTS for 27AMTS15
**Title:** WEDGE PLATE for 27AMTS15 [27-06"] Internal Bonded System

**Material:** Steel AISI C1045 Normalized

**Dimensions:**
- Ø8.11" (206.0mm)
- Ø9.84" (250.0mm)

**Description:**
- Marking
- Inspection hole Ø½" (9.5mm)

**Part #:** I-27-02-00

**Drawn:** F. MORAGLIA
**Checked:** T. CICCONE

**Date:** 12/20/2016

**Revision:** 0

**Code:**

---

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.

TENSA AMERICA LLC - www.tensaamerica.com - PHONE: +1 305-866-9917
1111 KANE CONCOURSE, S.TE 200 - BAY HARBOR ISLAND - 33154 FL
Material: Ductile Iron ASTM A536 GR80-55-06
Treatment: Galvanization according to ASTM A123
Title: ANCHOR 27AMTS15 (27-0.6"")

Dimensions: [INCH [mm]

For Reference Only

F.M. MORA GLIA
Drawn: F.M. MORA GLIA
Checked: T. CICCONE

Part #: 27-03-00

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 TENSAMERICA LLC, the company will safeguard its rights according to the civil and penal provisions of the Law.
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'_c is not less than the values shown in the present drawing.

NOTE: The local zone reinforcement is to be shown on the shop drawings.
NOTE:
- This drawing is not intended for manufacturing purposes.
Minimum radii of curvature determined as per FIB Bulletin 75, Annex A8

<table>
<thead>
<tr>
<th>Strands Nr.</th>
<th>23</th>
<th>24</th>
<th>25</th>
<th>26</th>
<th>27</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum radius [ft (m)]</td>
<td>25.03 (7.63)</td>
<td>25.75 (7.85)</td>
<td>26.48 (8.07)</td>
<td>27.23 (8.30)</td>
<td>27.95 (8.52)</td>
</tr>
</tbody>
</table>

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).
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

Material: Polypropylene - according to ASTM D4101
Treatment: -
Title: GTI SLIP-ON COUPLER
for Internal Bonded System
Standard fit for 27AMTS15

Part #: I-27-07-01
Code: 220465

Date: 12/20/2016
Dimensions: [inch] [mm]

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.
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.

Material: Polypropylene - according to ASTM D4101

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

Dimensions: [INCH] [mm] FOR REFERENCE ONLY
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

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).
6. Finish shrinking the sleeve with wide 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.

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

TENSA AMERICA LLC - www.tensaamerica.com - PHONE: +1 305-866-9917
1111 KANE CONCOURSE, S.TE 205 - BAY HARBOR ISLAND - 33154 FL

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.
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.

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

**Material:** Polypropylene - according to ASTM D4101

**Dimensions:**

- Ø5.43" [Ø138mm]
- Ø5.71" [Ø145mm]

**Treatment:**

- Polypropylene - according to ASTM D4101