**SECTION A-A**

**Intermediate Coupling Details**

Interim connections will be achieved through the pinning of wet tendons. The pinning shall be made with threaded bars 1/2" diameter. Tendon spirals shall be added as soon as the last tendon is added, and temporary couplers shall be added as soon as the last tendon is added.

**Note:** Components marked with "T" on the drawing are temporary.

---

**SECTION B-B**

**High-Injection and Venting**

Interim connections will be achieved through the pinning of wet tendons. The pinning shall be made with threaded bars 1/2" diameter. Tendon spirals shall be added as soon as the last tendon is added, and temporary couplers shall be added as soon as the last tendon is added.

**Note:** Components marked with "T" on the drawing are temporary.
Replace 3/4" ball valve (00-03-02-M) with 3/4" female plug (00-03-04) at the end of operations.

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

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

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.

**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>XX-01-00*</td>
<td>Protection Cap</td>
<td>Nylon 6-PA66 - according to ASTM D256</td>
</tr>
<tr>
<td>2</td>
<td>XX-03-00*</td>
<td>Anchor</td>
<td>407M Ductil Iron ASTM A536 GR80-55-06 + Galvanization according to ASTM A123</td>
</tr>
<tr>
<td>3</td>
<td>E-IU-XX-07-08*</td>
<td>Smooth Plastic Duct</td>
<td>High Density Polyethylene - according to ASTM D3350</td>
</tr>
<tr>
<td>4</td>
<td>00-01-03-M</td>
<td>NPT Pipe Nipple 1/2&quot;</td>
<td>SCH40 steel</td>
</tr>
<tr>
<td>5</td>
<td>00-01-04-M</td>
<td>NPT Ball Valve 1/2&quot;</td>
<td>SCH40 steel</td>
</tr>
<tr>
<td>6</td>
<td>00-01-05</td>
<td>NPT Plug 1/2&quot;</td>
<td>HDPE-PE - according to ASTM D3350</td>
</tr>
<tr>
<td>7</td>
<td>00-01-06</td>
<td>NPT Female Plug 1/2&quot;</td>
<td>HDPE-PE - according to ASTM D3350</td>
</tr>
<tr>
<td>8</td>
<td>00-03-02-M</td>
<td>NPT Pipe Nipple 3/4&quot;</td>
<td>SCH40 steel</td>
</tr>
<tr>
<td>9</td>
<td>00-03-03</td>
<td>NPT Ball Valve 3/4&quot;</td>
<td>SCH40 steel</td>
</tr>
<tr>
<td>10</td>
<td>00-03-04</td>
<td>NPT Plug 3/4&quot;</td>
<td>HDPE-PE - according to ASTM D3350</td>
</tr>
<tr>
<td>11</td>
<td>00-03-05</td>
<td>NPT Female Plug 3/4&quot;</td>
<td>HDPE-PE - according to ASTM D3350</td>
</tr>
<tr>
<td>12</td>
<td>00-07-04-EM</td>
<td>Vent Port 3/4&quot; NPT PE</td>
<td>Polyethylene - according to ASTM D3350</td>
</tr>
<tr>
<td>13</td>
<td>00-07-05</td>
<td>NPT Nipple Coupler 3/4&quot;</td>
<td>SCH40 steel</td>
</tr>
<tr>
<td>14</td>
<td>00-07-06</td>
<td>NPT Elbow 3/4&quot;</td>
<td>SCH40 steel</td>
</tr>
</tbody>
</table>

* depending from system dimension

**PIECE INTERNAL CONFIGURATION**

**PIECE EXTERNAL CONFIGURATION**

**MISCELLANEOUS MATERIALS**

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
<th>MATERIAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>Commercially available thread seal tape</td>
<td></td>
</tr>
</tbody>
</table>
NOTE:

- This drawing is not intended for manufacturing purposes;
Material: Steel AISI C1045 Normalized

Title: WEDGE PLATE for 31AMTS15 (31-06") External and Internal Unbonded systems

checked: T. CICCONE

Date: 12/20/2016
**SECTION A-A**

- Mark on outer side
- Top inspection access

**SECTION B-B**

- Front inspection access

---

**FRONT VIEW**

- Mark on outer side

---

**Material:**
Ductile Iron ASTM A536 GR80-55-06

**Treatment:**
Galvanization according to ASTM A123

**Title:**
ANCHOR 31AMTS15 (31-0.6")

**Dimensions:**
- INCH [mm]
- mm FOR REFERENCE ONLY

**Date:**
12/20/2016

**Checkered:**
T.C.

**Drawn:**
F.M.

---

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.
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.
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

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
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

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.

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

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 260 - BAY HARBOR ISLAND - 33154 FL

Drawn: LCIVATI Checked: TCICCONE

Date: 10/08/2019 Dimensions: RECIPE
Part #: E-IU-31-07-12 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.
**PHASE A**
bulkhead coupler connection

**PHASE B**
machecast coupler connection

**PHASE C**
segments detachment

**PHASE D**
gasket placing and protection

**PHASE E**
segments connection

**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>XX-07-03-01</td>
<td>Bulkhead Coupler</td>
<td>Polypropylene - according to ASTM D4101</td>
</tr>
<tr>
<td>2</td>
<td>XX-07-03-02</td>
<td>Match-Cast Coupler</td>
<td>Polypropylene - according to ASTM D4101</td>
</tr>
<tr>
<td>3</td>
<td>XX-07-03-03</td>
<td>Sealing Gasket</td>
<td>TPR Blend - according to FDoT Tab.2.2.1.7-1 Sec.960</td>
</tr>
<tr>
<td>4</td>
<td>XX-07-03-04</td>
<td>Boot</td>
<td>TPR Blend - according to FDoT Tab.2.2.1.7-1 Sec.960</td>
</tr>
<tr>
<td>5</td>
<td>XX-07-03-05</td>
<td>Bulkhead Load Plug</td>
<td>Note</td>
</tr>
<tr>
<td>6</td>
<td>XX-07-03-06</td>
<td>Match-Cast Load Plug</td>
<td>Note</td>
</tr>
<tr>
<td>7</td>
<td>XX-07-03-07</td>
<td>Gasket Blockout</td>
<td>Polypropylene - according to ASTM D4101</td>
</tr>
<tr>
<td>8</td>
<td>XX-07-03-08</td>
<td>Storage Cap</td>
<td>Polypropylene - according to ASTM D4101</td>
</tr>
<tr>
<td>9</td>
<td>00-10-00</td>
<td>Band Clamp</td>
<td>Stainless Steel GR316 - according to ASTM A240</td>
</tr>
<tr>
<td>10</td>
<td>I-XX-07-00</td>
<td>Corrugated Duct</td>
<td>Polypropylene - according to ASTM D4101</td>
</tr>
<tr>
<td>11</td>
<td>E-IU-XX-07-08</td>
<td>Smooth Plastic Duct</td>
<td>High Density Polyethylene - according to ASTM D3350</td>
</tr>
</tbody>
</table>

**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
NOTE:

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

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

Material: Polypropylene - according to ASTM D4101

Treatment:

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

Part #: 31-07-03-01  Code: 220531

Date: 03/20/2019

Dimensions: [INCH [mm]]

For Reference Only
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

Part #: 31-07-03-02
Code: 220532

Date: 03/20/2019
Dimensions: INCH [mm] FOR REFERENCE ONLY

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:

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

**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

Material: TPR Blend - according to FDoT Tab.2.2.1.7-1 Sec.960

Treatment: TPR Blend - according to FDoT Tab.2.2.1.7-1 Sec.960

Part #: 31-07-03-03
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:
TPR Blend - according to FDoT Tab.2.2.1.7-1 Sec.960

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

Dimensions:

INCH [mm] FOR REFERENCE ONLY

Date: 03/20/2019

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.
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

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

Part #: 31-07-03-06 Code: 220546

Dimensions: INCH [mm] FOR REFERENCE ONLY

Date: 03/20/2019

Drawn: L. CIVATI Checked: T. CICCONE

TENSA AMERICA LLC - www.tensaamerica.com - PHONE: +1 305-866-9917
1111 KANE COURSE, S, TE 200 - 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:

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

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

Material: Polypropylene - according to ASTM D4101

NOTE:

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

NOTE:

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

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 express written permission of TENSA AMERICA LLC, the company will safeguard its rights according to the civil and penal provisions of the Law.
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

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

Title:
CANUSA-CPS
HIGH TEMPERATURE HEAT SHRINK SLEEVE
Standard fit for 27AMTS15 and 31AMTS15
External and Internal Unbonded Systems

Part #: E-IU-27-07-13
Code: KLNN-125-150-BK

Date: 03/06/2020

Dimensions: mm [INCH]

TENSA AMERICA LLC - www.tensaamerica.com - PHONE: +1 305-866-9917
1111 KANE CONCOURSE, SUITE 300 - BAY HARBOR ISLAND - 33154 FL

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

Date: 03/06/2020
04/27/18
03/06/20