THESE SHOP DRAWINGS ILLUSTRATE THE DETAILS OF THE STRUCTURAL TECHNOLOGIES / VSL POST-TENSIONING SYSTEM. THEY WERE PREPARED IN CONFORMANCE WITH THE STRUCTURAL DESIGN PROVIDED TO STRUCTURAL TECHNOLOGIES / VSL BY PROJECT OWNER OR ITS REPRESENTATIVE. STRUCTURAL TECHNOLOGIES / VSL TOOK NO PART IN THE PREPARATION OR REVIEW OF SAID STRUCTURAL DESIGN AND STRUCTURAL TECHNOLOGIES / VSL DISCLAIMS ANY LIABILITY FOR IT. THE STAMP OR SEAL OF A STRUCTURAL TECHNOLOGIES / VSL EMPLOYEE ON THESE SHOP DRAWINGS PERTAINS ONLY TO THE TRANSFER OF THE FORCES REQUIRED BY THE ENGINEER OF RECORD ON THE STRUCTURAL DRAWINGS, AND NOT TO THE ADEQUACY OF THE STRUCTURAL DESIGN. NO WARRANTY, EXPRESSED OR IMPLIED, AS TO THE ADEQUACY OF THE STRUCTURAL DESIGN IS MADE BY VIRTUE OF ANY SUCH STAMP OR SEAL.

OVERALL ASSEMBLY

SC15-T ASSEMBLY, SEE SHEET A317

BEARING PLATE TO HOPE PIPE CONNECTION, SEE SHEET A317

TYP. HOPE TO HOPE FUSION WELD CONNECTION, SEE SHEET A320

TYP. HOPE TO HOPE ELECTROFUSION CONNECTION, SEE SHEET A319

BEARING PLATE TO HOPE PIPE CONNECTION, SEE SHEET A317

TYP. HOPE TO HOPE FUSION WELD CONNECTION, SEE SHEET A320

TYP. FUSION WELDED VENT/DRAIN, SEE SHEET A323 FOR ALL COMBINATIONS OF VENT & DRAIN DETAILS

3" OR 1-7 HOPE PIPE MIN. BENDING RADIUS 12'

ECI 6-7 OVERALL ASSEMBLY WITH FLEXIBLE FILLER
ECL 6-7 ASSEMBLY WITH FLEXIBLE FILLER

Installation Procedures (Installation Procedure is Generic, Follow the Project Specific Requirements and the Foot Specifications):
1. Lightly Grease Anchorage Cap Bolts. Use mounting holes in bearing plate to mount bearing plate assembly to form. Secure bearing plate assembly with anchorage cap bolts. Use care NOT to damage threads.
2. Install and Secure Sprue.
3. Install Filler Port Connections. Seal all temporary connections with pipe dope/silicone grease (by others) and seal all permanent connections with Bonduit o-ring or similar (by others). See Elastomeric Connection Notes on this sheet for installing pipe to bearing plate.
4. Install Filler Port Connections. Seal all temporary connections with pipe dope/silicone grease (by others) and seal all permanent connections with Bonduit o-ring or similar (by others).
5. Secure duct supports @ 2' Max. Insert mandrels into trumpets.
6. Per Foot Specification Section 462-8.2.1.2, A Vacuum Test is required prior to concrete placement.
7. Concrete Placement occurs by others.
8. Install Strands. Leave sufficient strands for stressing equipment.
9. Install Anchor heads. Make sure wedge cavities are clean and rust free. Use wire rope or similar (by others).
10. Only stress strands if concrete has reached required strength specified on drawings.
11. Elongation should be within ±7%.
12. After Engineers approval strands tails may be cut.
13. After form work is removed, use mounting bolts to install anchorage cap. Reinstall o-ring into anchorage cap.
14. System is now ready to air test.
15. Per the Foot Specification Section 462-8.2.2, a second air pressure test is required after strand stressing and prior to wax injection.
16. Wax tension for wax spec.

NOTE: ITEMS MARKED WITH A "T" ARE TEMPORARY AND ARE NOT A PERMANENT PART OF THE SYSTEM.

Elastomeric Connection Notes:
1. Roughen 3' or 4' end of pipe with coarse sandpaper.
2. Install "T" elastomer sleeve.
3. Install 2 SS band-clamps.
4. Center elastomer sleeve over the joint.
5. Apply 120# seating force per band clamp.
6. Use care NOT to damage threads or markings. Elastomer is black in color.

See Sheet A34 for vertical grouting options.
THESE SHOP DRAWINGS ILLUSTRATE THE DETAILS OF THE STRUCTURAL TECHNOLOGIES / VSL POST-TENSIONING SYSTEM. THEY WERE PREPARED IN CONFORMANCE WITH THE STRUCTURAL DESIGN PROVIDED TO STRUCTURAL TECHNOLOGIES / VSL BY PROJECT OWNER OR ITS REPRESENTATIVE. STRUCTURAL TECHNOLOGIES / VSL TOOK NO PART IN THE PREPARATION OR REVIEW OF SAID STRUCTURAL DESIGN AND STRUCTURAL TECHNOLOGIES / VSL DISCLAIMS ANY LIABILITY FOR IT. THE STAMP OR SEAL OF A STRUCTURAL TECHNOLOGIES / VSL EMPLOYEE ON THESE SHOP DRAWINGS PERTAINS ONLY TO THE TRANSFER OF THE FORCES REQUIRED BY THE ENGINEER OF RECORD ON THE STRUCTURAL DRAWINGS, AND NOT TO THE ADEQUACY OF THE STRUCTURAL DESIGN. NO WARRANTY, EXPRESSED OR IMPLIED, AS TO THE ADEQUACY OF THE STRUCTURAL DESIGN IS MADE BY VIRTUE OF ANY SUCH STAMP OR SEAL.

<table>
<thead>
<tr>
<th>ITEM</th>
<th>QTY</th>
<th>DESCRIPTION</th>
<th>MATERIAL</th>
<th>INVENTORY #</th>
</tr>
</thead>
<tbody>
<tr>
<td>1A</td>
<td>1</td>
<td>6-7 ANCHORAGE CAP W/ 1/4&quot; NPT FRONT PORT</td>
<td>ABS</td>
<td>0004607572</td>
</tr>
<tr>
<td>1B</td>
<td>1</td>
<td>6-7 ANCHORAGE CAP W/ 1/4&quot; NPT TOP PORT</td>
<td>ABS</td>
<td>0004607573</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>BOLT &amp; BEARING PLATE W/ 1&quot; NPT PORT (GALVANIZED)</td>
<td>A536 GR 80-55-06</td>
<td>02BP0036V</td>
</tr>
<tr>
<td>3</td>
<td>1 SET</td>
<td>1/2&quot;-13 THREADED ROD X 5 1/2&quot;</td>
<td>(316L) STAINLESS</td>
<td>02WX5014D</td>
</tr>
<tr>
<td>4</td>
<td>1 SET</td>
<td>1/2&quot;-13 NUT</td>
<td>(316L) STAINLESS</td>
<td>02WX5014D</td>
</tr>
<tr>
<td>5</td>
<td>1 SET</td>
<td>1/2&quot; WASHER</td>
<td>(316L) STAINLESS</td>
<td>02WX3014D</td>
</tr>
</tbody>
</table>

CAP TO BEARING PLATE BOLTED ASSEMBLY

1/2"-13 THREADED ROD

1/2"-13 NUT

1/2" WASHER
THESE SHOP DRAWINGS ILLUSTRATE THE DETAILS OF THE STRUCTURAL TECHNOLOGIES / VSL POST-TENSIONING SYSTEM. THEY WERE PREPARED IN CONFORMANCE WITH THE STRUCTURAL DESIGN PROVIDED TO STRUCTURAL TECHNOLOGIES / VSL BY PROJECT OWNER OR IT'S REPRESENTATIVE. STRUCTURAL TECHNOLOGIES / VSL TOOK NO PART IN THE PREPARATION OR REVIEW OF SAID STRUCTURAL DESIGN AND STRUCTURAL TECHNOLOGIES / VSL DISCLAIMS ANY LIABILITY FOR IT. THE STAMP OR SEAL OF A STRUCTURAL TECHNOLOGIES / VSL EMPLOYEE ON THESE SHOP DRAWINGS PERTAINS ONLY TO THE TRANSFER OF THE FORCES REQUIRED BY THE ENGINEER OF RECORD ON THE STRUCTURAL DRAWINGS, AND NOT TO THE ADEQUACY OF THE STRUCTURAL DESIGN. NO WARRANTY, EXPRESSED OR IMPLIED, AS TO THE ADEQUACY OF THE STRUCTURAL DESIGN IS MADE BY VIRTUE OF ANY SUCH STAMP OR SEAL.

NOTES:
1. ITEMS MARKED WITH A "T" ARE TEMPORARY AND ARE NOT A PERMANENT PART OF THE SYSTEM.
2. ALL COMPONENTS MUST BE PRESSURE RATED FOR 150 PSI.
3. CONCRETE COVER MUST MEET FDOT STRUCTURES DESIGN GUIDELINES SECTION 1.4.2.

<table>
<thead>
<tr>
<th>ITEM</th>
<th>QTY</th>
<th>DESCRIPTION</th>
<th>MATERIAL</th>
<th>INVENTORY #</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>1/4&quot; NPT STEEL PLUG</td>
<td>316 STAINLESS STEEL</td>
<td>02DT011656</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>1&quot; NPT STEEL PLUG</td>
<td>316 STAINLESS STEEL</td>
<td>02DT011686</td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>EC1-7 BEARING PLATE W 1/4&quot; NPT PORT</td>
<td>ABS</td>
<td>02FX031760</td>
</tr>
<tr>
<td>4</td>
<td>1</td>
<td>ECI-7 ANCHORAGE CAP W 1/4&quot; TOP PORT</td>
<td>ABS</td>
<td>02FX000770</td>
</tr>
<tr>
<td>5</td>
<td>1</td>
<td>ECI-7 ANCHORAGE CAP STEEL</td>
<td>SCB-40 STEEL</td>
<td>02DT011713</td>
</tr>
<tr>
<td>6</td>
<td>1</td>
<td>1&quot; NPT STEEL</td>
<td>SCH-40 STEEL</td>
<td>02DT011016</td>
</tr>
<tr>
<td>7</td>
<td>1</td>
<td>1&quot; NPT STEEL</td>
<td>SCH-40 STEEL</td>
<td>02DT011028</td>
</tr>
<tr>
<td>8</td>
<td>1</td>
<td>1/2&quot; NPT STEEL</td>
<td>SCH-40 STEEL</td>
<td>02DT011026</td>
</tr>
<tr>
<td>9</td>
<td>1</td>
<td>3/16&quot; PAN HEAD SCREW</td>
<td>316 STAINLESS STEEL</td>
<td>02WX1070</td>
</tr>
<tr>
<td>10</td>
<td>-</td>
<td>BONDUIT</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>11</td>
<td>-</td>
<td>SILICONE GREASE</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

SEE SHEET A335 FOR ANCHORAGE CAP VENTING DETAILS

NOTES:
1. ITEMS MARKED WITH A "T" ARE TEMPORARY AND ARE NOT A PERMANENT PART OF THE SYSTEM.
2. ALL COMPONENTS MUST BE PRESSURE RATED FOR 150 PSI.
3. CONCRETE COVER MUST MEET FDOT STRUCTURES DESIGN GUIDELINES SECTION 1.4.2.

THESE SHOP DRAWINGS ILLUSTRATE THE DETAILS OF THE STRUCTURAL TECHNOLOGIES / VSL POST-TENSIONING SYSTEM. THEY WERE PREPARED IN CONFORMANCE WITH THE STRUCTURAL DESIGN PROVIDED TO STRUCTURAL TECHNOLOGIES / VSL BY PROJECT OWNER OR IT'S REPRESENTATIVE. STRUCTURAL TECHNOLOGIES / VSL TOOK NO PART IN THE PREPARATION OR REVIEW OF SAID STRUCTURAL DESIGN AND STRUCTURAL TECHNOLOGIES / VSL DISCLAIMS ANY LIABILITY FOR IT. THE STAMP OR SEAL OF A STRUCTURAL TECHNOLOGIES / VSL EMPLOYEE ON THESE SHOP DRAWINGS PERTAINS ONLY TO THE TRANSFER OF THE FORCES REQUIRED BY THE ENGINEER OF RECORD ON THE STRUCTURAL DRAWINGS, AND NOT TO THE ADEQUACY OF THE STRUCTURAL DESIGN. NO WARRANTY, EXPRESSED OR IMPLIED, AS TO THE ADEQUACY OF THE STRUCTURAL DESIGN IS MADE BY VIRTUE OF ANY SUCH STAMP OR SEAL.

NOTES:
1. ITEMS MARKED WITH A "T" ARE TEMPORARY AND ARE NOT A PERMANENT PART OF THE SYSTEM.
2. ALL COMPONENTS MUST BE PRESSURE RATED FOR 150 PSI.
3. CONCRETE COVER MUST MEET FDOT STRUCTURES DESIGN GUIDELINES SECTION 1.4.2.

<table>
<thead>
<tr>
<th>ITEM</th>
<th>QTY</th>
<th>DESCRIPTION</th>
<th>MATERIAL</th>
<th>INVENTORY #</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>1/4&quot; NPT STEEL PLUG</td>
<td>316 STAINLESS STEEL</td>
<td>02DT011656</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>1&quot; NPT STEEL PLUG</td>
<td>316 STAINLESS STEEL</td>
<td>02DT011686</td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>EC1-7 BEARING PLATE W 1/4&quot; NPT PORT</td>
<td>ABS</td>
<td>02FX031760</td>
</tr>
<tr>
<td>4</td>
<td>1</td>
<td>ECI-7 ANCHORAGE CAP W 1/4&quot; TOP PORT</td>
<td>ABS</td>
<td>02FX000770</td>
</tr>
<tr>
<td>5</td>
<td>1</td>
<td>ECI-7 ANCHORAGE CAP STEEL</td>
<td>SCB-40 STEEL</td>
<td>02DT011713</td>
</tr>
<tr>
<td>6</td>
<td>1</td>
<td>1&quot; NPT STEEL</td>
<td>SCH-40 STEEL</td>
<td>02DT011016</td>
</tr>
<tr>
<td>7</td>
<td>1</td>
<td>1&quot; NPT STEEL</td>
<td>SCH-40 STEEL</td>
<td>02DT011028</td>
</tr>
<tr>
<td>8</td>
<td>1</td>
<td>1/2&quot; NPT STEEL</td>
<td>SCH-40 STEEL</td>
<td>02DT011026</td>
</tr>
<tr>
<td>9</td>
<td>1</td>
<td>3/16&quot; PAN HEAD SCREW</td>
<td>316 STAINLESS STEEL</td>
<td>02WX1070</td>
</tr>
<tr>
<td>10</td>
<td>-</td>
<td>BONDUIT</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>11</td>
<td>-</td>
<td>SILICONE GREASE</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

SEE SHEET A335 FOR ANCHORAGE CAP VENTING DETAILS

NOTES:
1. ITEMS MARKED WITH A "T" ARE TEMPORARY AND ARE NOT A PERMANENT PART OF THE SYSTEM.
2. ALL COMPONENTS MUST BE PRESSURE RATED FOR 150 PSI.
3. CONCRETE COVER MUST MEET FDOT STRUCTURES DESIGN GUIDELINES SECTION 1.4.2.

THESE SHOP DRAWINGS ILLUSTRATE THE DETAILS OF THE STRUCTURAL TECHNOLOGIES / VSL POST-TENSIONING SYSTEM. THEY WERE PREPARED IN CONFORMANCE WITH THE STRUCTURAL DESIGN PROVIDED TO STRUCTURAL TECHNOLOGIES / VSL BY PROJECT OWNER OR IT'S REPRESENTATIVE. STRUCTURAL TECHNOLOGIES / VSL TOOK NO PART IN THE PREPARATION OR REVIEW OF SAID STRUCTURAL DESIGN AND STRUCTURAL TECHNOLOGIES / VSL DISCLAIMS ANY LIABILITY FOR IT. THE STAMP OR SEAL OF A STRUCTURAL TECHNOLOGIES / VSL EMPLOYEE ON THESE SHOP DRAWINGS PERTAINS ONLY TO THE TRANSFER OF THE FORCES REQUIRED BY THE ENGINEER OF RECORD ON THE STRUCTURAL DRAWINGS, AND NOT TO THE ADEQUACY OF THE STRUCTURAL DESIGN. NO WARRANTY, EXPRESSED OR IMPLIED, AS TO THE ADEQUACY OF THE STRUCTURAL DESIGN IS MADE BY VIRTUE OF ANY SUCH STAMP OR SEAL.

NOTES:
1. ITEMS MARKED WITH A "T" ARE TEMPORARY AND ARE NOT A PERMANENT PART OF THE SYSTEM.
2. ALL COMPONENTS MUST BE PRESSURE RATED FOR 150 PSI.
3. CONCRETE COVER MUST MEET FDOT STRUCTURES DESIGN GUIDELINES SECTION 1.4.2.

<table>
<thead>
<tr>
<th>ITEM</th>
<th>QTY</th>
<th>DESCRIPTION</th>
<th>MATERIAL</th>
<th>INVENTORY #</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>1/4&quot; NPT STEEL PLUG</td>
<td>316 STAINLESS STEEL</td>
<td>02DT011656</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>1&quot; NPT STEEL PLUG</td>
<td>316 STAINLESS STEEL</td>
<td>02DT011686</td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>EC1-7 BEARING PLATE W 1/4&quot; NPT PORT</td>
<td>ABS</td>
<td>02FX031760</td>
</tr>
<tr>
<td>4</td>
<td>1</td>
<td>ECI-7 ANCHORAGE CAP W 1/4&quot; TOP PORT</td>
<td>ABS</td>
<td>02FX000770</td>
</tr>
<tr>
<td>5</td>
<td>1</td>
<td>ECI-7 ANCHORAGE CAP STEEL</td>
<td>SCB-40 STEEL</td>
<td>02DT011713</td>
</tr>
<tr>
<td>6</td>
<td>1</td>
<td>1&quot; NPT STEEL</td>
<td>SCH-40 STEEL</td>
<td>02DT011016</td>
</tr>
<tr>
<td>7</td>
<td>1</td>
<td>1&quot; NPT STEEL</td>
<td>SCH-40 STEEL</td>
<td>02DT011028</td>
</tr>
<tr>
<td>8</td>
<td>1</td>
<td>1/2&quot; NPT STEEL</td>
<td>SCH-40 STEEL</td>
<td>02DT011026</td>
</tr>
<tr>
<td>9</td>
<td>1</td>
<td>3/16&quot; PAN HEAD SCREW</td>
<td>316 STAINLESS STEEL</td>
<td>02WX1070</td>
</tr>
<tr>
<td>10</td>
<td>-</td>
<td>BONDUIT</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>11</td>
<td>-</td>
<td>SILICONE GREASE</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

SEE SHEET A335 FOR ANCHORAGE CAP VENTING DETAILS

NOTES:
1. ITEMS MARKED WITH A "T" ARE TEMPORARY AND ARE NOT A PERMANENT PART OF THE SYSTEM.
2. ALL COMPONENTS MUST BE PRESSURE RATED FOR 150 PSI.
3. CONCRETE COVER MUST MEET FDOT STRUCTURES DESIGN GUIDELINES SECTION 1.4.2.
EPOXY GROUT POURED BACK AREA (TYPICAL) - REFER TO POST-STANDARD PLANE INDEX 462-003 FOR POST-TENSIONING ANCHORAGE AND TENDON FILLING DETAILS

3/4" NPT SMOOTH GRouting PORT INSTALLATION
1. DRILL Ø7/8" HOLE INTO PIPE.
2. CONNECT THE SOCKET WELDING DEVICE TO THE POWER SOURCE.
3. ALLOW THE SOCKET WELDING DEVICE TO REACH ITS WORKING TEMPERATURE.
4. SIMULTANEOUSLY, INSERT MALE ADAPTER OF SOCKET WELDING DEVICE FROM DRILLED HOLE AND GRouting PORT FROM FEMALE ADAPTER.
5. APPLY LIGHT PRESSURE FOR 20-25 SECONDS BY PUSHING THE GRouting PORT WITH THE PALM OF HAND.
6. SIMULTANEOUSLY, REMOVE SOCKET WELDING DEVICE FROM DRILLED HOLE AND GRouting PORT FROM FEMALE ADAPTER.
7. INSERT GRouting PORT INTO HOLE UNTIL THE SHOULDER IS REACHED. THIS OPERATION SHOULD BE CARRIED OUT AS QUICKLY AND CAREFULLY AS POSSIBLE, FIRMLY HOLD THE PIECES TOGETHER FOR A MINIMUM OF 15 SECONDS.

NOTES
1. ITEMS MARKED WITH A "T" ARE TEMPORARY AND ARE NOT A PERMANENT PART OF THE SYSTEM.
2. THIS ASSEMBLY CAN BE APPLIED IN ANY REQUIRED ORIENTATION TO CREATE EITHER A VENT OR A DRAIN.
3. ALL COMPONENTS MUST BE PRESSURE RATED FOR 150 PSI.
4. CONCRETE COVER MUST MEET FDOT STRUCTURES DESIGN GUIDELINES SECTION 1.4.2.

ITEM | QTY | DESCRIPTION | MATERIAL | INVENTORY #
---|---|---|---|---
2 | 1 | 3/4" NPT STEEL NIPPLE | SCH 40 STEEL | S02DT01956
3 | 1 | 3/4" NPT STEEL COUPLER | SCH 40 STEEL | S02DT01956
5 | 1 | 3/4" NPT STEEL 1/4 TURN BALL VALVE | SCH 40 STEEL | S02DT01956
6 | 1 | 3/4" NPT STEEL CAP | SCH 40 STEEL | S02DT01956
7 | 1 | 3/4" FN PT X MNPT STEEL ELBOW | SCH 40 STEEL | S02DT01956
8 | 1 | 3/4" NPT STEEL PLUG | 316 STAINLESS STEEL | S02DT01956
11 | - | SILICONE GREASE | - | -
13 | - | BONDUIT | - | -

3/4" FNPT SMOOTH GROUT PORT INSTALLATION
1. CLEAN PIPE PRIOR TO GROUT PORT INSTALLATION.
2. DRILL Ø7/8" HOLE INTO PIPE.
3. CONNECT THE SOCKET WELDING DEVICE TO THE POWER SOURCE.
4. ALLOW THE SOCKET WELDING DEVICE TO REACH ITS WORKING TEMPERATURE.
5. SIMULTANEOUSLY, INSERT MALE ADAPTER OF SOCKET WELDING DEVICE FROM DRILLED HOLE AND GRouting PORT FROM FEMALE ADAPTER.
6. APPLY LIGHT PRESSURE FOR 20-25 SECONDS BY PUSHING THE GRouting PORT WITH THE PALM OF HAND.
7. SIMULTANEOUSLY, REMOVE SOCKET WELDING DEVICE FROM DRILLED HOLE AND GRouting PORT FROM FEMALE ADAPTER.
8. INSERT GRouting PORT INTO HOLE UNTIL THE SHOULDER IS REACHED. THIS OPERATION SHOULD BE CARRIED OUT AS QUICKLY AND CAREFULLY AS POSSIBLE, FIRMLY HOLD THE PIECES TOGETHER FOR A MINIMUM OF 15 SECONDS.

NOTES
1. ITEMS MARKED WITH A "T" ARE TEMPORARY AND ARE NOT A PERMANENT PART OF THE SYSTEM.
2. THIS ASSEMBLY CAN BE APPLIED IN ANY REQUIRED ORIENTATION TO CREATE EITHER A VENT OR A DRAIN.
3. ALL COMPONENTS MUST BE PRESSURE RATED FOR 150 PSI.
4. CONCRETE COVER MUST MEET FDOT STRUCTURES DESIGN GUIDELINES SECTION 1.4.2.

ITEM | QTY | DESCRIPTION | MATERIAL | INVENTORY #
---|---|---|---|---
2 | 1 | 3/4" NPT STEEL NIPPLE | SCH 40 STEEL | S02DT01956
3 | 1 | 3/4" NPT STEEL COUPLER | SCH 40 STEEL | S02DT01956
5 | 1 | 3/4" NPT STEEL 1/4 TURN BALL VALVE | SCH 40 STEEL | S02DT01956
6 | 1 | 3/4" NPT STEEL CAP | SCH 40 STEEL | S02DT01956
7 | 1 | 3/4" FN PT X MNPT STEEL ELBOW | SCH 40 STEEL | S02DT01956
8 | 1 | 3/4" NPT STEEL PLUG | 316 STAINLESS STEEL | S02DT01956
11 | - | SILICONE GREASE | - | -
13 | - | BONDUIT | - | -

3/4" FNPT SMOOTH GROUT PORT INSTALLATION
1. CLEAN PIPE PRIOR TO GROUT PORT INSTALLATION.
2. DRILL Ø7/8" HOLE INTO PIPE.
3. CONNECT THE SOCKET WELDING DEVICE TO THE POWER SOURCE.
4. ALLOW THE SOCKET WELDING DEVICE TO REACH ITS WORKING TEMPERATURE.
5. SIMULTANEOUSLY, INSERT MALE ADAPTER OF SOCKET WELDING DEVICE FROM DRILLED HOLE AND GRouting PORT FROM FEMALE ADAPTER.
6. APPLY LIGHT PRESSURE FOR 20-25 SECONDS BY PUSHING THE GRouting PORT WITH THE PALM OF HAND.
7. SIMULTANEOUSLY, REMOVE SOCKET WELDING DEVICE FROM DRILLED HOLE AND GRouting PORT FROM FEMALE ADAPTER.
8. INSERT GRouting PORT INTO HOLE UNTIL THE SHOULDER IS REACHED. THIS OPERATION SHOULD BE CARRIED OUT AS QUICKLY AND CAREFULLY AS POSSIBLE, FIRMLY HOLD THE PIECES TOGETHER FOR A MINIMUM OF 15 SECONDS.

NOTES
1. ITEMS MARKED WITH A "T" ARE TEMPORARY AND ARE NOT A PERMANENT PART OF THE SYSTEM.
2. THIS ASSEMBLY CAN BE APPLIED IN ANY REQUIRED ORIENTATION TO CREATE EITHER A VENT OR A DRAIN.
3. ALL COMPONENTS MUST BE PRESSURE RATED FOR 150 PSI.
4. CONCRETE COVER MUST MEET FDOT STRUCTURES DESIGN GUIDELINES SECTION 1.4.2.

ITEM | QTY | DESCRIPTION | MATERIAL | INVENTORY #
---|---|---|---|---
2 | 1 | 3/4" NPT STEEL NIPPLE | SCH 40 STEEL | S02DT01956
3 | 1 | 3/4" NPT STEEL COUPLER | SCH 40 STEEL | S02DT01956
5 | 1 | 3/4" NPT STEEL 1/4 TURN BALL VALVE | SCH 40 STEEL | S02DT01956
6 | 1 | 3/4" NPT STEEL CAP | SCH 40 STEEL | S02DT01956
7 | 1 | 3/4" FN PT X MNPT STEEL ELBOW | SCH 40 STEEL | S02DT01956
8 | 1 | 3/4" NPT STEEL PLUG | 316 STAINLESS STEEL | S02DT01956
11 | - | SILICONE GREASE | - | -
13 | - | BONDUIT | - | -
**Title:** SYSTEM DRAWING  
**Project Information:**  
**Sheet No:**  
**Scale:** NTS  
**Electronic File Location:**  
**File Name:** A319 3in HDPE Electrofusion Connection Rev0.dwg  
**Plot Date/Time:** 26FEB2018  
**Description by CHK:**  
**Date:**  

### Item Table

<table>
<thead>
<tr>
<th>ITEM</th>
<th>QTY</th>
<th>DESCRIPTION</th>
<th>MATERIAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>-</td>
<td>3&quot; HDPE PIPE DR-17</td>
<td>ASTM D3035</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>3&quot; ELECTROFUSION COUPLER</td>
<td>COMPOSITE</td>
</tr>
</tbody>
</table>

**Installation Procedure (See Manufacturer Instruction Manual for Detailed Installation Instructions):**

1. Cut square ends on pipe to be fused.
2. Clean both pipe ends.
3. Scrape both pipe ends with provided scraping tool.
4. Clean both pipe ends using 97% or greater isopropyl alcohol.
5. Use rerounding tools provided to correct oval pipe if necessary.
6. Use alignment clamps provided to ensure pipe is aligned with coupler.
7. Support pipe and coupler and restrain pipe to prevent movement.
8. Check for gaps and eliminate as necessary.
9. Attach leads of the provided fusion processor to the coupler.
10. Scan the barcode on the coupler.
11. Start fusion process.
12. When fusion process is complete, unplug the leads.
13. Do not move or pressurize the joint components before cooling time has completed.

**Note:** Follow coupler manufacturer's installation instructions.

---

**Text:**  
These shop drawings illustrate the details of the structural technologies / VSL post-tensioning system. They were prepared in conformance with the structural design provided to Structural Technologies / VSL by the project owner or its representative. Structural Technologies / VSL took no part in the preparation or review of said structural design and structural technologies / VSL disclaim any liability for it. The stamp or seal of a Structural Technologies / VSL employee on these shop drawings pertains only to the transfer of the forces required by the engineer of record on the structural drawings, and not to the adequacy of the structural design. No warranty, expressed or implied, as to the adequacy of the structural design is made by virtue of any such stamp or seal.

---

**Title:** ELECTROFUSION COUPLER CONNECTION  
**Project No:**  
**Scale:**  
**Description:**  
**Notes:**  
**Document Information:**

---
**Title:**
System Drawing

**Elevation View**

**Typical 3" HDPE Pipe to 3" HDPE Pipe Fusion Welded Connection**

**Item:**

<table>
<thead>
<tr>
<th>ITEM</th>
<th>QTY</th>
<th>DESCRIPTION</th>
<th>MATERIAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3&quot; HDPE Pipe DR-17</td>
<td>ASTM D3355</td>
</tr>
</tbody>
</table>

**Notes:**

1. HDPE 3" IPS/DR-17 meets FDOT 960 Spec.
2. See VSL Butt Welding Procedure in Appendix

**Dimensions:**

- 3.05" elevation view
- 3.30" pipe diameter

**Drawings:**

- Fusion Butt Weld
- Use Inspected & Approved Fusion Pipe Welder

**Electronic File Location:**

I:\VSL System Drawings\Work In Progress Drawings\Work In Progress Drawings\Florida DOT Test 2017\ECI 6-7 Flexible Filler Submittal

**Electronics File Name:**

A320 3in HDPE TO 3in HDPE Fusion Weld Rev 0.dwg

**Plot Date/Time:**

4:26 PM 07Mar2018

**Approve for Construction:**

26FEB2018

**Dimensions:**

- 3.500" elevation view
- 3.064" pipe diameter

**Notes:**

- HDPE 3" IPS/DR-17 meets FDOT 960 Spec.
- See VSL Butt Welding Procedure in Appendix
THESE SHOP DRAWINGS ILLUSTRATE THE DETAILS OF THE STRUCTURAL TECHNOLOGIES / VSL POST-TENSIONING SYSTEM. THEY WERE PREPARED IN CONFORMANCE WITH THE STRUCTURAL DESIGN PROVIDED TO STRUCTURAL TECHNOLOGIES / VSL BY PROJECT OWNER OR ITS REPRESENTATIVE. STRUCTURAL TECHNOLOGIES / VSL TOOK NO PART IN THE PREPARATION OR REVIEW OF SAID STRUCTURAL DESIGN AND STRUCTURAL TECHNOLOGIES / VSL DISCLAIMS ANY LIABILITY FOR IT. THE STAMP OR SEAL OF A STRUCTURAL TECHNOLOGIES / VSL EMPLOYEE ON THESE SHOP DRAWINGS PERTAINS ONLY TO THE TRANSFER OF THE FORCES REQUIRED BY THE ENGINEER OF RECORD ON THE STRUCTURAL DRAWINGS, AND NOT TO THE ADEQUACY OF THE STRUCTURAL DESIGN. NO WARRANTY, EXPRESSED OR IMPLIED, AS TO THE ADEQUACY OF THE STRUCTURAL DESIGN IS MADE BY VIRTUE OF ANY SUCH STAMP OR SEAL.

<table>
<thead>
<tr>
<th>ITEM</th>
<th>QTY</th>
<th>DESCRIPTION</th>
<th>MATERIAL</th>
<th>INVENTORY NUMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>1</td>
<td>3/16&quot; PAN HEAD SCREW</td>
<td>316 STAINLESS STEEL</td>
<td>02WX1070</td>
</tr>
<tr>
<td>4</td>
<td>1</td>
<td>1/4&quot; NPT STEEL PLUG</td>
<td>316 STAINLESS STEEL</td>
<td>02HT5166</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>1/4&quot; NPT STEEL NIPPLE</td>
<td>SCH 40 STEEL</td>
<td>02DT01956</td>
</tr>
<tr>
<td>18</td>
<td>1</td>
<td>6-7 ANCHORAGE CAP W/ 1/4&quot; NPT TOP PORT</td>
<td>ABS</td>
<td>02GC60703</td>
</tr>
<tr>
<td>16</td>
<td>1</td>
<td>6-7 ANCHORAGE CAP W/ 1/4&quot; NPT FRONT PORT</td>
<td>ABS</td>
<td>02GC60702</td>
</tr>
</tbody>
</table>

6-7 ANCHORAGE CAP

SECTION B-B

NOTE: ITEMS MARKED WITH A "T" ARE TEMPORARY AND ARE NOT A PERMANENT PART OF THE SYSTEM.

TOP PORT

FRONT PORT

AFTER WAX
6-7 ANCHORAGE CAP W/ 1/4" NPT FRONT PORT

THESE SHOP DRAWINGS ILLUSTRATE THE DETAILS OF THE STRUCTURAL TECHNOLOGIES / VSL POST-TENSIONING SYSTEM. THEY WERE PREPARED IN CONFORMANCE WITH THE STRUCTURAL DESIGN PROVIDED TO STRUCTURAL TECHNOLOGIES / VSL BY PROJECT OWNER OR ITS REPRESENTATIVE. STRUCTURAL TECHNOLOGIES / VSL TOOK NO PART IN THE PREPARATION OR REVIEW OF SAID STRUCTURAL DESIGN AND STRUCTURAL TECHNOLOGIES / VSL DISCLAIMS ANY LIABILITY FOR IT. THE STAMP OR SEAL OF A STRUCTURAL TECHNOLOGIES / VSL EMPLOYEE ON THESE SHOP DRAWINGS PERTAINS ONLY TO THE TRANSFER OF THE FORCES REQUIRED BY THE ENGINEER OF RECORD ON THE STRUCTURAL DRAWINGS, AND NOT TO THE ADEQUACY OF THE STRUCTURAL DESIGN. NO WARRANTY, EXPRESSED OR IMPLIED, AS TO THE ADEQUACY OF THE STRUCTURAL DESIGN IS MADE BY VIRTUE OF ANY SUCH STAMP OR SEAL.

FILE NAME: C547 6-7gc Rev 4.dwg

PLOT DATE/TIME: 12Mar2018

THIS DOCUMENT, INCLUDING ANY DRAWINGS, SPECIFICATIONS, AND CALCULATIONS HEREIN, CONTAINS INFORMATION THAT IS PROPRIETARY TO STRUCTURAL TECHNOLOGIES LLC ("VSL"). THIS DOCUMENT AND THE INFORMATION CONTAINED HEREIN IS CONFIDENTIAL, AND MAY NOT BE REPRODUCED OR DISCLOSED WITHOUT THE PRIOR WRITTEN CONSENT OF STRUCTURAL TECHNOLOGIES LLC ("VSL"). FURTHER, THE USE OF THIS DOCUMENT OR ANY INFORMATION PRESENTED HEREIN IS RESTRICTED TO THE SPECIFIC PROJECT AND PURPOSE FOR WHICH IT WAS PREPARED. ANY OTHER USE IS STRICTLY PROHIBITED STRUCTURAL TECHNOLOGIES LLC ("VSL") DISCLAIMS ANY LIABILITY FOR ANY UNAUTHORIZED, UNINTENDED OR OTHER IMPERMISSIBLE USE OF THIS DOCUMENT OR ANY INFORMATION IT CONTAINS.

SECTION A-A

SECTION B-B

6-7 ANCHORAGE CAP
6-7 ANCHORAGE CAP W/ 1/4" TOP PORT

THESE SHOP DRAWINGS ILLUSTRATE THE DETAILS OF THE STRUCTURAL TECHNOLOGIES / VSL POST-TENSIONING SYSTEM. THEY WERE PREPARED IN CONFORMANCE WITH THE STRUCTURAL DESIGN PROVIDED TO STRUCTURAL TECHNOLOGIES / VSL BY PROJECT OWNER OR ITS REPRESENTATIVE. STRUCTURAL TECHNOLOGIES / VSL TOOK NO PART IN THE PREPARATION OR REVIEW OF SAID STRUCTURAL DESIGN AND STRUCTURAL TECHNOLOGIES / VSL DISCLAIMS ANY LIABILITY FOR IT. THE STAMP OR SEAL OF A STRUCTURAL TECHNOLOGIES / VSL EMPLOYEE ON THESE SHOP DRAWINGS PERTAINS ONLY TO THE TRANSFER OF THE FORCES REQUIRED BY THE ENGINEER OF RECORD ON THE STRUCTURAL DRAWINGS, AND NOT TO THE ADEQUACY OF THE STRUCTURAL DESIGN. NO WARRANTY, EXPRESSED OR IMPLIED, AS TO THE ADEQUACY OF THE STRUCTURAL DESIGN IS MADE BY VIRTUE OF ANY SUCH STAMP OR SEAL.
THESE SHOP DRAWINGS ILLUSTRATE THE DETAILS OF THE STRUCTURAL TECHNOLOGIES / VSL POST-TENSIONING SYSTEM. THEY WERE PREPARED IN CONFORMANCE WITH THE STRUCTURAL DESIGN PROVIDED TO STRUCTURAL TECHNOLOGIES / VSL BY PROJECT OWNER OR ITS REPRESENTATIVE. STRUCTURAL TECHNOLOGIES / VSL TOOK NO PART IN THE PREPARATION OR REVIEW OF SAID STRUCTURAL DESIGN AND STRUCTURAL TECHNOLOGIES / VSL DISCLAIMS ANY LIABILITY FOR IT. THE STAMP OR SEAL OF A STRUCTURAL TECHNOLOGIES / VSL EMPLOYEE ON THESE SHOP DRAWINGS PERTAINS ONLY TO THE TRANSFER OF THE FORCES REQUIRED BY THE ENGINEER OF RECORD ON THE STRUCTURAL DRAWINGS, AND NOT TO THE ADEQUACY OF THE STRUCTURAL DESIGN. NO WARRANTY, EXPRESSED OR IMPLIED, AS TO THE ADEQUACY OF THE STRUCTURAL DESIGN IS MADE BY VIRTUE OF ANY SUCH STAMP OR SEAL.

ITEM | QTY | DESCRIPTION | MATERIAL | SIZE | INVENTORY# |
--- | --- | --- | --- | --- | --- |
1 | - | 6-7 ANCHORAGE CAP O-RING | HNBR | 6.25"x6.50"x0.125" | 02WX5017 |
GENERAL NOTES

1) MATERIAL: ASTM A536 GR 80-55-06

INVENTORY No. 02BP0036V (GALVANIZED)
#4, ASTM A615 60 KSI REBAR, Ø1½", 3" PITCH, 6 1/2 TURNS TOTAL
VSL INVENTORY# 029P0095

APPROX. 11"

PLAN VIEW

TIE FIRST 1 1/2 TURNS @ BEARING PLATE SIDE
OF SPIRAL TO ACHIEVE FULL DEVELOPMENT.

11" OUTSIDE DIAMETER

TOP VIEW

PROJECT INFORMATION:
SYSTEM DRAWING
SHEET NO:
PROJECT NO:
SCALE:

FILE NAME:
C713 ECI 6-7 SPIRAL Rev 0.dwg

ISSUED FOR CONSTRUCTION
26FEB2018

STRUCTURAL TECHNOLOGIES, LLC CLAIMS
A STRICT PROPRIETARY RIGHT IN ALL
DRAWINGS, SPECIFICATIONS AND
CALCULATIONS ("INFORMATION") SET
FORTH ON THIS SHEET. THE USE OF SUCH
INFORMATION IN WHOLE OR IN PART, OR
ANY REPRODUCTION THEREOF, IS
RESTRICTED TO THE SITE FOR WHICH IT
WAS PREPARED AND TO THE MATERIAL
AND/OR SERVICE PROVIDED BY
STRUCTURAL TECHNOLOGIES / VSL. ANY
OTHER USE IS STRICTLY PROHIBITED, AND
STRUCTURAL TECHNOLOGIES / VSL
DISCLAIMS ANY LIABILITY THEREFORE.

C713
ECI 6-7 SPIRAL
ANCHORHEAD ECI 6-7

GENERAL NOTES

1) MATERIAL: ASTM A556 GR 80-55-06
2) WEIGHT: 11.2 LBS
INVENTORY No. 02AH0030

SECTION A-A
SECTION A-A

NOTES:
1. MATERIAL: AISI 11L17/12L14, PRODUCED IN STRICT ACCORDANCE WITH VSL MS 3.1.006
2. WEIGHT: 0.197 LBS. (APPROX.)
3. HEAT TREATMENT: CASEHARDENED
4. INVENTORY NO. 02WG0008
These shop drawings illustrate the details of the structural technologies VSL post-tensioning system. They were prepared in conformance with the structural design provided to Structural Technologies / VSL by project owner or its representative. Structural Technologies / VSL took no part in the preparation or review of said structural design and Structural Technologies / VSL disclaims any liability for it. The stamp or seal of a Structural Technologies / VSL employee on these shop drawings pertains only to the transfer of the forces required by the engineer of record on the structural drawings, and not to the adequacy of the structural design. No warranty, expressed or implied, as to the adequacy of the structural design is made by virtue of any such stamp or seal.

Title: System Drawing
Project Information:
Sheet No: 1
Project No: 1
Scale: NTS

This document, including any drawings, specifications, and calculations herein, contains information that is proprietary to Structural Technologies LLC ("VSL"). This document and the information contained herein is confidential, and may not be reproduced or disclosed without the prior written consent of Structural Technologies LLC ("VSL"). Further, the use of this document or any information presented herein is restricted to the specific project and purpose for which it was prepared. Any other use is strictly prohibited. Structural Technologies LLC ("VSL") disclaims any liability for any unauthorized, unintended or other impermissible use of this document or any information it contains.
The shop drawings illustrate the details of the structural technologies/VSL post-tensioning system. They were prepared in conformance with the structural design provided to Structural Technologies/VSL by the project owner or its representative. Structural Technologies/VSL took no part in the preparation or review of said structural design and Structural Technologies/VSL disclaims any liability for it. The stamp or seal of a Structural Technologies/VSL employee on these shop drawings pertains only to the transfer of the forces required by the engineer of record on the structural drawings, and not to the adequacy of the structural design. No warranty, expressed or implied, as to the adequacy of the structural design is made by virtue of any such stamp or seal.

This document, including any drawings, specifications, and calculations herein, contains information that is proprietary to Structural Technologies LLC ("VSL"). This document and the information contained herein is confidential, and may not be reproduced or disclosed without the prior written consent of Structural Technologies LLC ("VSL"). Further, the use of this document or any information presented herein is restricted to the specific project and purpose for which it was prepared. Any other use is strictly prohibited. Structural Technologies LLC ("VSL") disclaims any liability for any unauthorized, unintended or other impermissible use of this document or any information it contains.

<table>
<thead>
<tr>
<th>ITEM</th>
<th>QTY</th>
<th>DESCRIPTION</th>
<th>MATERIAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>-</td>
<td>3&quot; HDPE PIPE DR-17</td>
<td>ASTM D3035</td>
</tr>
</tbody>
</table>

Note: Minimum bend radius = 12'-0"
THESE SHOP DRAWINGS ILLUSTRATE THE DETAILS OF THE STRUCTURAL TECHNOLOGIES / VSL POST-TENSIONING SYSTEM. THEY WERE PREPARED IN CONFORMANCE WITH THE STRUCTURAL DESIGN PROVIDED TO STRUCTURAL TECHNOLOGIES / VSL BY PROJECT OWNER OR ITS REPRESENTATIVE. STRUCTURAL TECHNOLOGIES / VSL TOOK NO PART IN THE PREPARATION OR REVIEW OF SAID STRUCTURAL DESIGN AND STRUCTURAL TECHNOLOGIES / VSL DISCLAIMS ANY LIABILITY FOR IT. THE STAMP OR SEAL OF A STRUCTURAL TECHNOLOGIES / VSL EMPLOYEE ON THESE SHOP DRAWINGS PERTAINS ONLY TO THE TRANSFER OF THE FORCES REQUIRED BY THE ENGINEER OF RECORD ON THE STRUCTURAL DRAWINGS, AND NOT TO THE ADEQUACY OF THE STRUCTURAL DESIGN. NO WARRANTY, EXPRESSED OR IMPLIED, AS TO THE ADEQUACY OF THE STRUCTURAL DESIGN IS MADE BY VIRTUE OF ANY SUCH STAMP OR SEAL.
THESE SHOP DRAWINGS ILLUSTRATE THE DETAILS OF THE STRUCTURAL TECHNOLOGIES / VSL POST-TENSIONING SYSTEM. THEY WERE PREPARED IN CONFORMANCE WITH THE STRUCTURAL DESIGN PROVIDED TO STRUCTURAL TECHNOLOGIES / VSL BY PROJECT OWNER OR IT'S REPRESENTATIVE. STRUCTURAL TECHNOLOGIES / VSL TOOK NO PART IN THE PREPARATION OR REVIEW OF SAID STRUCTURAL DESIGN AND STRUCTURAL TECHNOLOGIES / VSL DISCLAIMS ANY LIABILITY FOR IT. THE STAMP OR SEAL OF A STRUCTURAL TECHNOLOGIES / VSL EMPLOYEE ON THESE SHOP DRAWINGS PERTAINS ONLY TO THE TRANSFER OF THE FORCES REQUIRED BY THE ENGINEER OF RECORD ON THE STRUCTURAL DRAWINGS, AND NOT TO THE ADEQUACY OF THE STRUCTURAL DESIGN. NO WARRANTY, EXPRESSED OR IMPLIED, AS TO THE ADEQUACY OF THE STRUCTURAL DESIGN IS MADE BY VIRTUE OF ANY SUCH STAMP OR SEAL.

---

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

**END VIEW**  
**SIDE VIEW**
THESE SHOP DRAWINGS ILLUSTRATE THE DETAILS OF THE STRUCTURAL TECHNOLOGIES / VSL POST-TENSIONING SYSTEM. THEY WERE PREPARED IN CONFORMANCE WITH THE STRUCTURAL DESIGN PROVIDED TO STRUCTURAL TECHNOLOGIES / VSL BY PROJECT OWNER OR ITS REPRESENTATIVE. STRUCTURAL TECHNOLOGIES / VSL TOOK NO PART IN THE PREPARATION OR REVIEW OF SAID STRUCTURAL DESIGN AND STRUCTURAL TECHNOLOGIES / VSL DISCLAIMS ANY LIABILITY FOR IT. THE STAMP OR SEAL OF A STRUCTURAL TECHNOLOGIES / VSL EMPLOYEE ON THESE SHOP DRAWINGS PERTAINS ONLY TO THE TRANSFER OF THE FORCES REQUIRED BY THE ENGINEER OF RECORD ON THE STRUCTURAL DRAWINGS, AND NOT TO THE ADEQUACY OF THE STRUCTURAL DESIGN. NO WARRANTY, EXPRESSED OR IMPLIED, AS TO THE ADEQUACY OF THE STRUCTURAL DESIGN IS MADE BY VIRTUE OF ANY SUCH STAMP OR SEAL.

<table>
<thead>
<tr>
<th>ITEM</th>
<th>QTY</th>
<th>DESCRIPTION</th>
<th>MATERIAL</th>
<th>INVENTORY#</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>3/4&quot; FNPT SMOOTH GROUT PORT</td>
<td>POLYETHYLENE</td>
<td>02DT0253</td>
</tr>
</tbody>
</table>

END VIEW

SIDE VIEW

1.725"
THESE SHOP DRAWINGS ILLUSTRATE THE DETAILS OF THE STRUCTURAL TECHNOLOGIES / VSL POST-TENSIONING SYSTEM. THEY WERE PREPARED IN CONFORMANCE WITH THE STRUCTURAL DESIGN PROVIDED TO STRUCTURAL TECHNOLOGIES / VSL BY PROJECT OWNER OR IT'S REPRESENTATIVE. STRUCTURAL TECHNOLOGIES / VSL TOOK NO PART IN THE PREPARATION OR REVIEW OF SAID STRUCTURAL DESIGN AND STRUCTURAL TECHNOLOGIES / VSL DISCLAIMS ANY LIABILITY FOR IT. THE STAMP OR SEAL OF A STRUCTURAL TECHNOLOGIES / VSL EMPLOYEE ON THESE SHOP DRAWINGS PERTAINS ONLY TO THE TRANSFER OF THE FORCES REQUIRED BY THE ENGINEER OF RECORD ON THE STRUCTURAL DRAWINGS, AND NOT TO THE ADEQUACY OF THE STRUCTURAL DESIGN. NO WARRANTY, EXPRESSED OR IMPLIED, AS TO THE ADEQUACY OF THE STRUCTURAL DESIGN IS MADE BY VIRTUE OF ANY SUCH STAMP OR SEAL.
These shop drawings illustrate the details of the structural technologies / VSL post-tensioning system. They were prepared in conformance with the structural design provided to structural technologies / VSL by project owner or its representative. Structural technologies / VSL took no part in the preparation or review of said structural design and structural technologies / VSL disclaims any liability for it. The stamp or seal of a structural technologies / VSL employee on these shop drawings pertains only to the transfer of the forces required by the engineer of record on the structural drawings, and not to the adequacy of the structural design. No warranty, expressed or implied, as to the adequacy of the structural design is made by virtue of any such stamp or seal.

ITEM | QTY | DESCRIPTION | MATERIAL
--- | --- | --- | ---
1 | - | 3/4" NPT NIPPLE | SCH 40 STEEL
THESE SHOP DRAWINGS ILLUSTRATE THE DETAILS OF THE STRUCTURAL TECHNOLOGIES / VSL POST-TENSIONING SYSTEM. THEY WERE PREPARED IN CONFORMANCE WITH THE STRUCTURAL DESIGN PROVIDED TO STRUCTURAL TECHNOLOGIES / VSL BY PROJECT OWNER OR ITS REPRESENTATIVE. STRUCTURAL TECHNOLOGIES / VSL TOOK NO PART IN THE PREPARATION OR REVIEW OF SAID STRUCTURAL DESIGN AND STRUCTURAL TECHNOLOGIES / VSL DISCLAIMS ANY LIABILITY FOR IT. THE STAMP OR SEAL OF A STRUCTURAL TECHNOLOGIES / VSL EMPLOYEE ON THESE SHOP DRAWINGS PERTAINS ONLY TO THE TRANSFER OF THE FORCES REQUIRED BY THE ENGINEER OF RECORD ON THE STRUCTURAL DRAWINGS, AND NOT TO THE ADEQUACY OF THE STRUCTURAL DESIGN. NO WARRANTY, EXPRESSED OR IMPLIED, AS TO THE ADEQUACY OF THE STRUCTURAL DESIGN IS MADE BY VIRTUE OF ANY SUCH STAMP OR SEAL.

ITEM  QTY  DESCRIPTION  MATERIAL
1  -  1" NPT STEEL NIPPLE  SCH 40 STEEL
THESE SHOP DRAWINGS ILLUSTRATE THE DETAILS OF THE STRUCTURAL TECHNOLOGIES / VSL POST-TENSIONING SYSTEM. THEY WERE PREPARED IN CONFORMANCE WITH THE STRUCTURAL DESIGN PROVIDED TO STRUCTURAL TECHNOLOGIES / VSL BY PROJECT OWNER OR IT'S REPRESENTATIVE. STRUCTURAL TECHNOLOGIES / VSL TOOK NO PART IN THE PREPARATION OR REVIEW OF SAID STRUCTURAL DESIGN AND STRUCTURAL TECHNOLOGIES / VSL DISCLAIMS ANY LIABILITY FOR IT. THE STAMP OR SEAL OF A STRUCTURAL TECHNOLOGIES / VSL EMPLOYEE ON THESE SHOP DRAWINGS PERTAINS ONLY TO THE TRANSFER OF THE FORCES REQUIRED BY THE ENGINEER OF RECORD ON THE STRUCTURAL DRAWINGS, AND NOT TO THE ADEQUACY OF THE STRUCTURAL DESIGN. NO WARRANTY, EXPRESSED OR IMPLIED, AS TO THE ADEQUACY OF THE STRUCTURAL DESIGN IS MADE BY VIRTUE OF ANY SUCH STAMP OR SEAL.
THESE SHOP DRAWINGS ILLUSTRATE THE DETAILS OF THE STRUCTURAL TECHNOLOGIES / VSL POST-TENSIONING SYSTEM. THEY WERE PREPARED IN CONFORMANCE WITH THE STRUCTURAL DESIGN PROVIDED TO STRUCTURAL TECHNOLOGIES / VSL BY PROJECT OWNER OR ITS REPRESENTATIVE. STRUCTURAL TECHNOLOGIES / VSL TOOK NO PART IN THE PREPARATION OR REVIEW OF SAID STRUCTURAL DESIGN AND STRUCTURAL TECHNOLOGIES / VSL DISCLAIMS ANY LIABILITY FOR IT. THE STAMP OR SEAL OF A STRUCTURAL TECHNOLOGIES / VSL EMPLOYEE ON THESE SHOP DRAWINGS PERTAINS ONLY TO THE TRANSFER OF THE FORCES REQUIRED BY THE ENGINEER OF RECORD ON THE STRUCTURAL DRAWINGS, AND NOT TO THE ADEQUACY OF THE STRUCTURAL DESIGN. NO WARRANTY, EXPRESSED OR IMPLIED, AS TO THE ADEQUACY OF THE STRUCTURAL DESIGN IS MADE BY VIRTUE OF ANY SUCH STAMP OR SEAL.

ITEM | QTY | DESCRIPTION | MATERIAL | INVENTORY#  
--- | --- | --- | --- | ---  
1 | - | 3/4" FNPT X MNPT STEEL ELBOW | SCH 40 STEEL | 02DT06954
THESE SHOP DRAWINGS ILLUSTRATE THE DETAILS OF THE STRUCTURAL TECHNOLOGIES / VSL POST-TENSIONING SYSTEM. THEY WERE PREPARED IN CONFORMANCE WITH THE STRUCTURAL DESIGN PROVIDED TO STRUCTURAL TECHNOLOGIES / VSL BY PROJECT OWNER OR ITS REPRESENTATIVE. STRUCTURAL TECHNOLOGIES / VSL TOOK NO PART IN THE PREPARATION OR REVIEW OF SAID STRUCTURAL DESIGN AND STRUCTURAL TECHNOLOGIES / VSL DISCLAIMS ANY LIABILITY FOR IT. THE STAMP OR SEAL OF A STRUCTURAL TECHNOLOGIES / VSL EMPLOYEE ON THESE SHOP DRAWINGS PERTAINS ONLY TO THE TRANSFER OF THE FORCES REQUIRED BY THE ENGINEER OF RECORD ON THE STRUCTURAL DRAWINGS, AND NOT TO THE ADEQUACY OF THE STRUCTURAL DESIGN. NO WARRANTY, EXPRESSED OR IMPLIED, AS TO THE ADEQUACY OF THE STRUCTURAL DESIGN IS MADE BY VIRTUE OF ANY SUCH STAMP OR SEAL.
The shop drawings illustrate the details of the structural technologies/VSL post-tensioning system. They were prepared in conformance with the structural design provided to Structural Technologies/VSL by Project Owner or its representative. Structural Technologies/VSL took no part in the preparation or review of said structural design and Structural Technologies/VSL disclaims any liability for it. The stamp or seal of a Structural Technologies/VSL employee on these shop drawings pertains only to the transfer of the forces required by the Engineer of Record on the structural drawings, and not to the adequacy of the structural design. No warranty, expressed or implied, as to the adequacy of the structural design is made by virtue of any such stamp or seal.

Title: System Drawing

Project Information:

<table>
<thead>
<tr>
<th>SHEET NO:</th>
<th>PROJECT NO:</th>
<th>SCALE:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>NTSC</td>
</tr>
</tbody>
</table>

Item: 3/4" NPT Steel Plug

<table>
<thead>
<tr>
<th>ITEM</th>
<th>QTY</th>
<th>DESCRIPTION</th>
<th>MATERIAL</th>
<th>INVENTORY#</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>3/4&quot; NPT Steel Plug</td>
<td>316 Stainless Steel</td>
<td>02DD016957</td>
</tr>
</tbody>
</table>

END VIEW

SIDE VIEW

Dimensions: 0.62" x 0.46" x 0.20"
These shop drawings illustrate the details of the structural technologies / VSL post-tensioning system. They were prepared in conformance with the structural design provided to Structural Technologies / VSL by Project Owner or its representative. Structural Technologies / VSL took no part in the preparation or review of said structural design and Structural Technologies / VSL disclaims any liability for it. The stamp or seal of a Structural Technologies / VSL employee on these shop drawings pertains only to the transfer of the forces required by the engineer of record on the structural drawings, and not to the adequacy of the structural design. No warranty, expressed or implied, as to the adequacy of the structural design is made by virtue of any such stamp or seal.

### Electrical File Location

I:\VSL System Drawings\Work In Progress Drawings\Work In Progress Drawings\Florida DOT Test 2017\NCS 6-31 Flexible Filler Submittal

### File Name

C754 1in NPT Steel Plug.dwg

### Plot Date/Time

8:15 AM 26Feb2018

### Structure Technologies, LLC

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

Structural Technologies, LLC
Dallas Office
15600 Trinity Blvd, Suite 118
Fort Worth, TX 76155

Phone: (817) 545-4807
Fax: (817) 545-4827
WWW.VSL.NET

### Title

System Drawing

### Project Information

Sheet No:
Project No:
Scale:

---

### Inventory

<table>
<thead>
<tr>
<th>ITEM</th>
<th>QTY</th>
<th>DESCRIPTION</th>
<th>MATERIAL</th>
<th>INVENTORY#</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>-</td>
<td>1&quot; NPT STEEL PLUG</td>
<td>316 STAINLESS STEEL</td>
<td>02DT01958</td>
</tr>
</tbody>
</table>

1" NPT STEEL PLUG

---

### Notes

1. Structural Technologies, LLC claims a strict proprietary right in all drawings, specifications and calculations ("information") set forth on this sheet. The use of such information in whole or in part, or any reproduction thereof, is restricted to the site for which it was prepared and to the material and/or service provided by Structural Technologies / VSL. Any other use is strictly prohibited, and Structural Technologies / VSL disclaims any liability therefor.

2. The items listed above are for reference only and are not intended to be part of the contract documents. The actual quantities and specifications may vary.

---

3. The dimensions shown are approximate and may not be exact. Final tolerances and clearances must be determined by the engineer of record.

---

4. The material specifications listed are typical and may not represent the exact material to be used. Final material verification and acceptance must be performed by the project owner or its representative.

---

5. The shop drawings are not intended to be a substitute for the structural engineer's calculations and must be reviewed and approved by the structural engineer of record.
THESE SHOP DRAWINGS ILLUSTRATE THE DETAILS OF THE STRUCTURAL TECHNOLOGIES / VSL POST-TENSIONING SYSTEM. THEY WERE PREPARED IN CONFORMANCE WITH THE STRUCTURAL DESIGN PROVIDED TO STRUCTURAL TECHNOLOGIES / VSL BY PROJECT OWNER OR ITS REPRESENTATIVE. STRUCTURAL TECHNOLOGIES / VSL TOOK NO PART IN THE PREPARATION OR REVIEW OF SAID STRUCTURAL DESIGN AND STRUCTURAL TECHNOLOGIES / VSL DISCLAIMS ANY LIABILITY FOR IT. THE STAMP OR SEAL OF A STRUCTURAL TECHNOLOGIES / VSL EMPLOYEE ON THESE SHOP DRAWINGS PERTAINS ONLY TO THE TRANSFER OF THE FORCES REQUIRED BY THE ENGINEER OF RECORD ON THE STRUCTURAL DRAWINGS, AND NOT TO THE ADEQUACY OF THE STRUCTURAL DESIGN. NO WARRANTY, EXPRESSED OR IMPLIED, AS TO THE ADEQUACY OF THE STRUCTURAL DESIGN IS MADE BY VIRTUE OF ANY SUCH STAMP OR SEAL.

ITEM | QTY | DESCRIPTION | MATERIAL | INVENTORY#  
--- | --- | --- | --- | ---  
1 | - | 3/4" NPT STEEL CAP | SCH 40 STEEL | 02D101950
THESE SHOP DRAWINGS ILLUSTRATE THE DETAILS OF THE STRUCTURAL TECHNOLOGIES / VSL POST-TENSIONING SYSTEM. THEY WERE PREPARED IN CONFORMANCE WITH THE STRUCTURAL DESIGN PROVIDED TO STRUCTURAL TECHNOLOGIES / VSL BY PROJECT OWNER OR ITS REPRESENTATIVE. STRUCTURAL TECHNOLOGIES / VSL TOOK NO PART IN THE PREPARATION OR REVIEW OF SAID STRUCTURAL DESIGN AND STRUCTURAL TECHNOLOGIES / VSL DISCLAIMS ANY LIABILITY FOR IT. THE STAMP OR SEAL OF A STRUCTURAL TECHNOLOGIES / VSL EMPLOYEE ON THESE SHOP DRAWINGS PERTAINS ONLY TO THE TRANSFER OF THE FORCES REQUIRED BY THE ENGINEER OF RECORD ON THE STRUCTURAL DRAWINGS, AND NOT TO THE ADEQUACY OF THE STRUCTURAL DESIGN. NO WARRANTY, EXPRESSED OR IMPLIED, AS TO THE ADEQUACY OF THE STRUCTURAL DESIGN IS MADE BY VIRTUE OF ANY SUCH STAMP OR SEAL.

<table>
<thead>
<tr>
<th>ITEM</th>
<th>QTY</th>
<th>DESCRIPTION</th>
<th>MATERIAL</th>
<th>INVENTORY#</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>1&quot; NPT STEEL CAP</td>
<td>SCH 40 STEEL</td>
<td>02D101951</td>
</tr>
</tbody>
</table>

END VIEW

SIDE VIEW

1.77"

1.61"

1" NPT STEEL CAP

SCH 40 STEEL

02D101951
THESE SHOP DRAWINGS ILLUSTRATE THE DETAILS OF THE STRUCTURAL TECHNOLOGIES / VSL POST-TENSIONING SYSTEM. THEY WERE PREPARED IN CONFORMANCE WITH THE STRUCTURAL DESIGN PROVIDED TO STRUCTURAL TECHNOLOGIES / VSL BY PROJECT OWNER OR ITS REPRESENTATIVE. STRUCTURAL TECHNOLOGIES / VSL TOOK NO PART IN THE PREPARATION OR REVIEW OF SAID STRUCTURAL DESIGN AND STRUCTURAL TECHNOLOGIES / VSL DISCLAIMS ANY LIABILITY FOR IT. THE STAMP OR SEAL OF A STRUCTURAL TECHNOLOGIES / VSL EMPLOYEE ON THESE SHOP DRAWINGS PERTAINS ONLY TO THE TRANSFER OF THE FORCES REQUIRED BY THE ENGINEER OF RECORD ON THE STRUCTURAL DRAWINGS, AND NOT TO THE ADEQUACY OF THE STRUCTURAL DESIGN. NO WARRANTY, EXPRESSED OR IMPLIED, AS TO THE ADEQUACY OF THE STRUCTURAL DESIGN IS MADE BY VIRTUE OF ANY SUCH STAMP OR SEAL.

---

ITEM | QTY | DESCRIPTION | MATERIAL | INVENTORY# |
--- | --- | --- | --- | --- |
1 | - | 1/4" F/F NPT 1/4 TURN BALL VALVE | SCH 40 STEEL | 02D101924 |
These Shop Drawings illustrate the details of the Structural Technologies / VSL Post-Tensioning System. They were prepared in conformance with the structural design provided to Structural Technologies / VSL by Project Owner or its representative. Structural Technologies / VSL took no part in the preparation or review of said structural design and Structural Technologies / VSL disclaims any liability for it. The stamp or seal of a Structural Technologies / VSL employee on these Shop Drawings pertains only to the transfer of the forces required by the Engineer of Record on the structural drawings, and not to the adequacy of the structural design. No warranty, expressed or implied, as to the adequacy of the structural design is made by virtue of any such stamp or seal.

**Item**: 3/4" NPT Steel 1/4 Turn Ball Valve
**Material**: SCH 40 Steel
**Inventory**: 02DT01925

**Dimensions**:
- Side View: 3" x 4 1/4" x 5 3/4"
- Top View: 3/4" x 4 1/4" x 3/16"
- End View: 3/4" Min. ID

Tightness:
- Hex: 7/8" Min. ID

This Shop Drawings illustrate the details of the Structural Technologies / VSL Post-Tensioning System. They were prepared in conformance with the structural design provided to Structural Technologies / VSL by Project Owner or its representative. Structural Technologies / VSL took no part in the preparation or review of said structural design and Structural Technologies / VSL disclaims any liability for it. The stamp or seal of a Structural Technologies / VSL employee on these Shop Drawings pertains only to the transfer of the forces required by the Engineer of Record on the structural drawings, and not to the adequacy of the structural design. No warranty, expressed or implied, as to the adequacy of the structural design is made by virtue of any such stamp or seal.
THESE SHOP DRAWINGS ILLUSTRATE THE DETAILS OF THE STRUCTURAL TECHNOLOGIES / VSL POST-TENSIONING SYSTEM. THEY WERE PREPARED IN CONFORMANCE WITH THE STRUCTURAL DESIGN PROVIDED TO STRUCTURAL TECHNOLOGIES / VSL BY PROJECT OWNER OR ITS REPRESENTATIVE. STRUCTURAL TECHNOLOGIES / VSL TOOK NO PART IN THE PREPARATION OR REVIEW OF SAID STRUCTURAL DESIGN AND STRUCTURAL TECHNOLOGIES / VSL DISCLAIMS ANY LIABILITY FOR IT. THE STAMP OR SEAL OF A STRUCTURAL TECHNOLOGIES / VSL EMPLOYEE ON THESE SHOP DRAWINGS PERTAINS ONLY TO THE TRANSFER OF THE FORCES REQUIRED BY THE ENGINEER OF RECORD ON THE STRUCTURAL DRAWINGS, AND NOT TO THE ADEQUACY OF THE STRUCTURAL DESIGN. NO WARRANTY, EXPRESSED OR IMPLIED, AS TO THE ADEQUACY OF THE STRUCTURAL DESIGN IS MADE BY VIRTUE OF ANY SUCH STAMP OR SEAL.

ITEM | QTY | DESCRIPTION | MATERIAL | INVENTORY# |
--- | --- | --- | --- | --- |
1 | - | 1" NPT STEEL 1/4 TURN BALL VALVE | SCH 40 STEEL | 02D101926 |