

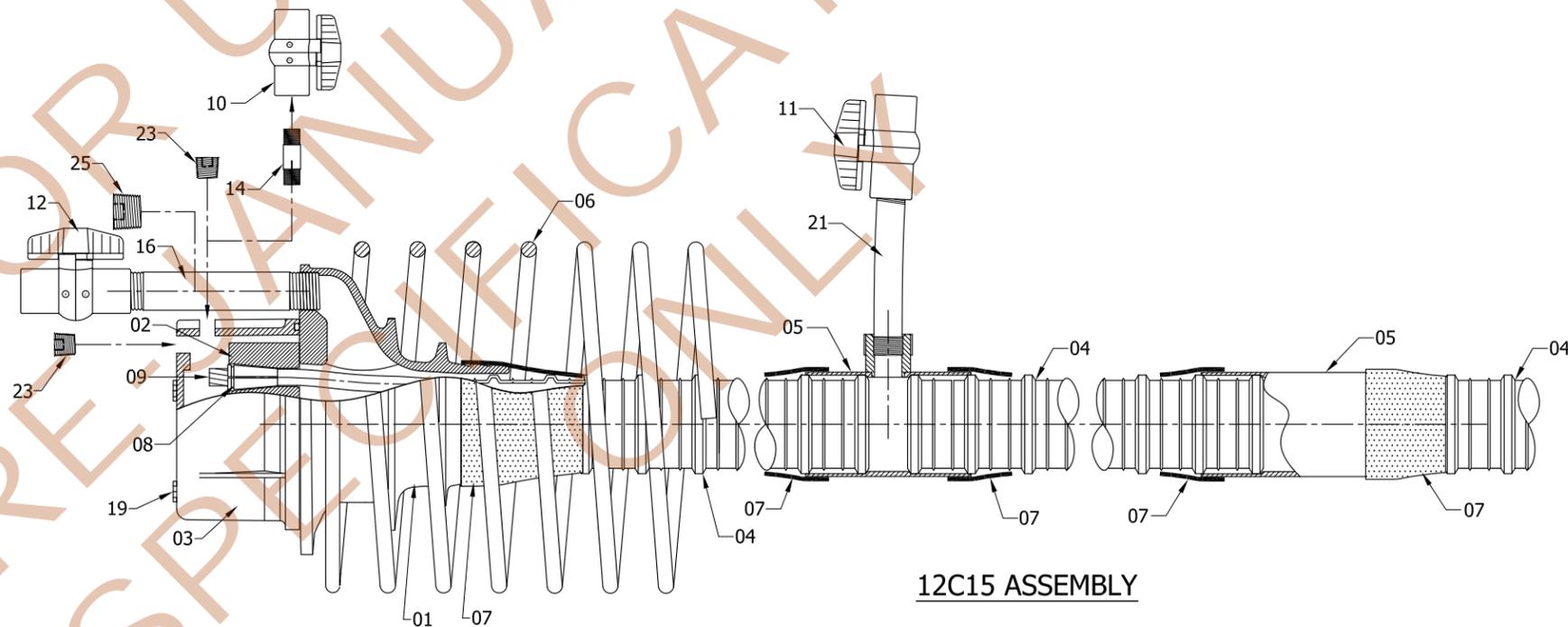
**12C15 INSTALLATION PROCEDURE:**

- 1) LAYOUT EACH TENDON ANCHORAGE AND DUCT LOCATION ACCORDING TO THE SPACING SHOWN ON THE TENDON LAYOUT PLANS.
- 2) BOLT THE ANCHORAGE TRUMPLATE SECURELY AND PERPENDICULAR TO THE BLOCK-OUT FORM.
- 3) INDIVIDUAL DUCT LENGTHS SHALL BE COUPLED TOGETHER TO OBTAIN THE CORRECT LENGTH FROM ANCHORAGE TO ANCHORAGE. INSTALL VENTED COUPLERS AS SHOWN ON THESE DRAWINGS AND THE APPLICABLE CONTRACT PLANS.
- 4) USE HEAT SHRINK TO SEAL DUCT TO DUCT AND DUCT TO TRUMPLATE CONNECTIONS FOLLOWING THE MANUFACTURER'S RECOMMENDED PROCEDURE. CARE MUST BE OBSERVED TO AVOID BURNS ON THE DUCT.
- 5) PLACE ALL REINFORCEMENTS AS SHOWN ON THESE DRAWINGS AND THE APPLICABLE CONTRACT PLANS.
- 6) PROCEED WITH CONCRETING, TAKING CARE TO NOT DAMAGE OR DISPLACE THE DUCT.
- 7) PLACE THE CORRECT QUANTITY OF STRAND IN EACH DUCT LEAVING MINIMUM STRESSING TAILS AT EACH END. THIS CAN BE ACCOMPLISHED BY PUSHING OR PULLING THE STRAND THROUGH THE DUCT.
- 8) INSTALL THE ANCHOR BLOCK AT EACH END OF THE TRUMPLATE. INSERT THE WEDGES INTO THE ANCHOR BLOCK.
- 9) STRESSING MAY PROCEED ONCE THE CONCRETE HAS ATTAINED THE REQUIRED COMPRESSIVE STRENGTH AS INDICATED IN THE PLANS AND AS CONFIRMED BY TESTS.
- 10) ALL TENDONS SHALL BE STRESSED BY JACKING FROM ONE OR TWO ENDS IN THE APPROVED SEQUENCE. ONCE APPROVED, CUT TAILS TO 1.5" MAXIMUM LENGTH.
- 11) INSTALL GROUT CAPS, INLET AND OUTLET ACCESSORIES.
- 12) PERFORM DUCT PRESSURE FIELD TEST AS REQUIRED BY APPLICABLE SPECIFICATIONS.
- 13) GROUTING SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST EDITION OF THE PTI GUIDE SPECIFICATIONS FOR GROUTING OF POST TENSIONING STRUCTURES OR APPLICABLE SPECIFICATION.

• THE ABOVE IS A GENERIC INSTALLATION PROCEDURE - JOB SPECIFIC PROCEDURES SHALL ACCOMPANY EACH PROJECT.

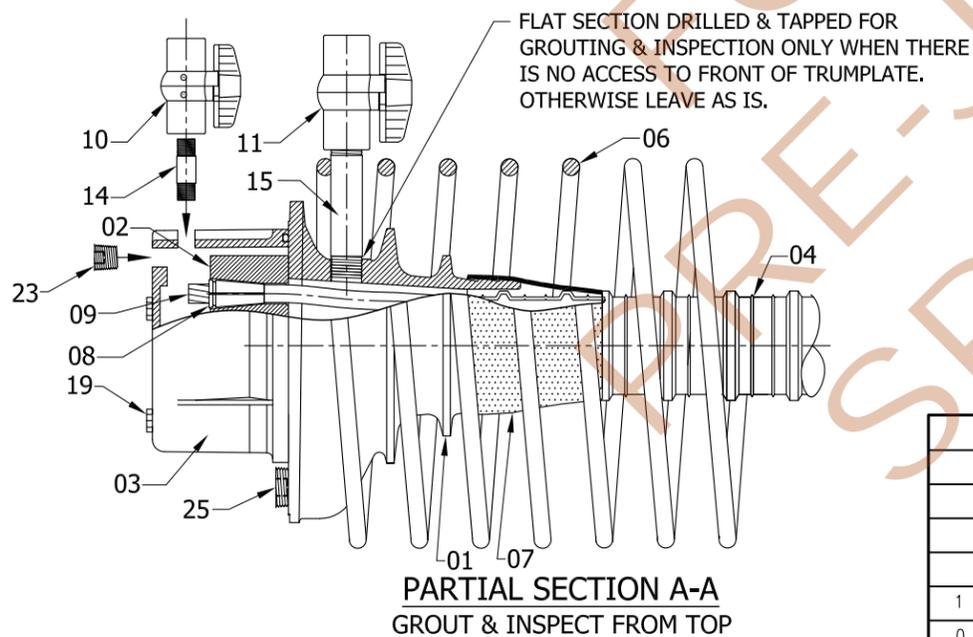
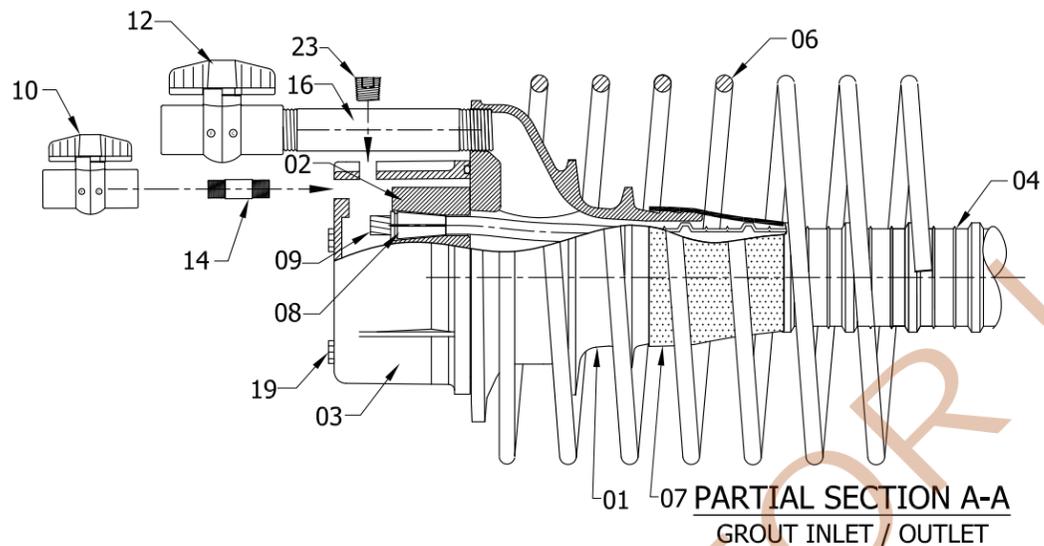
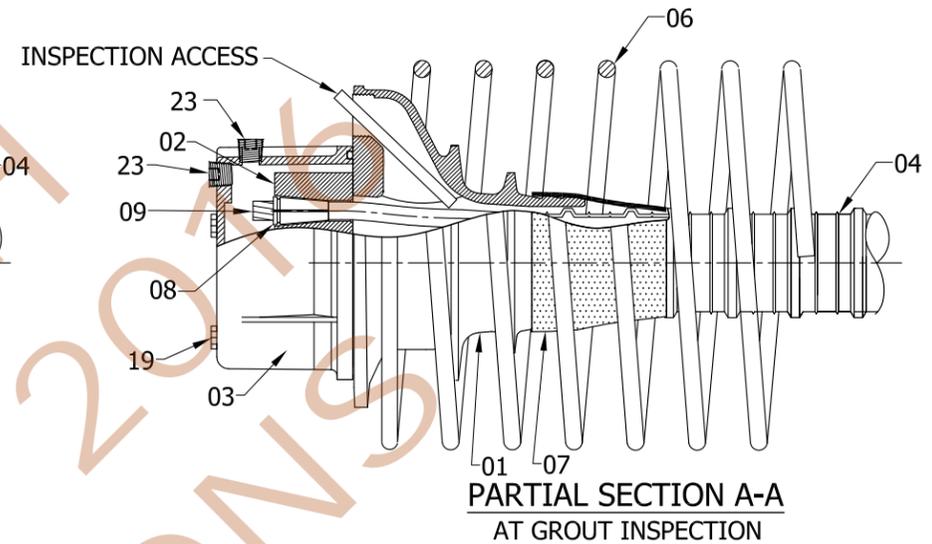
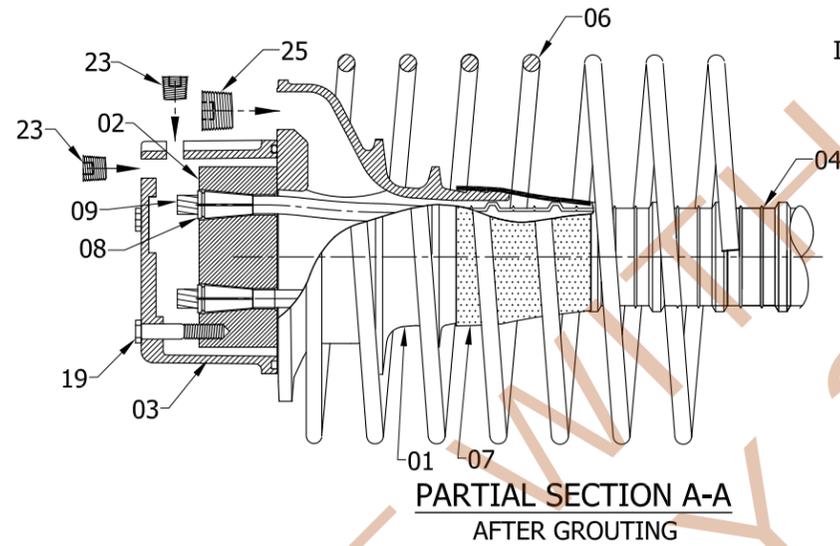
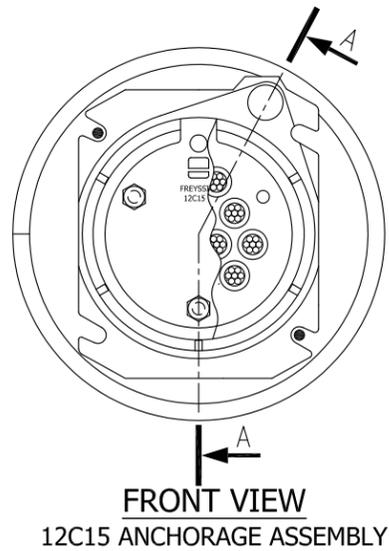
12C15 ASSEMBLY				
ITEM	DESCRIPTION	MATERIAL	PART # / LABEL	DWG REF.
	12C15 INTERNAL TENDON W/COUPLER OVERALL ASSEMBLY			FINC-12C15-001
	12C15 ANCHORAGE ASSEMBLY			FINC-12C15-002
01	12C15 ANCHORAGE (TRUMPLATE)	ASTM A48, 35B GALV. ASTM A123	FREYSSINET 12C15	FINC-12C15-003
02	12C15 ANCHOR BLOCK (WEDGE PLATE)	AISI C1045/C1050	12C15	FINC-12C15-004
03	12/13C15 GROUT CAP	NYLON ASTM D5989	FREYSSINET 12/13C15	FINC-12C15-005
04	12/13C15 76mm GTI DUCT	POLYPROPYLENE ASTM D4101	220300	FINC-12C15-006
05	12/13C15 76mm GTI SLIP-ON COUPLER W/ OR W/O VENT	POLYPROPYLENE ASTM D4101	220305	FINC-12C15-007
06	12C15 SPIRAL REINFORCEMENT	STEEL GR. 60ksi; ASTM A615	N/A	FINC-12C15-008
07	12C15 HEAT SHRINK SLEEVE	POLYOLEFIN BACKING W/ ADHES VE	PLA 90	FINC-12C15-009
08	WEDGE	12L14 ASTM A240	N/A	FINC-001
09	0.6" DIA. STRAND	STEEL ASTM A416	N/A	FINC-002
10	1/2" BALL VALVE	PVC SCH. 80 PRESSURE RATING ≥ 150 psi	N/A	FINC-003
11	3/4" BALL VALVE	PVC SCH. 80 PRESSURE RATING ≥ 150 psi	N/A	FINC-004
12	1" BALL VALVE	PVC SCH. 80 PRESSURE RATING ≥ 150 psi	N/A	FINC-005
14	1/2" NIPPLE	PVC SCH. 80 PRESSURE RATING ≥ 150 psi	N/A	FINC-007
16	1" NIPPLE	PVC SCH. 80 PRESSURE RATING ≥ 150 psi	N/A	FINC-009
19	3/8" BOLT	316 STAINLESS STEEL ASTM F593	F593	FINC-012
21	3/4" CRESLINE PIPE	HIGH-DENSITY POLYETHYLENE	CRESLINE HD160	FINC-014
23	1/2" PLUG	NYLON ASTM D5989	FREYSSI 1/2"	FINC-016
25	1" PLUG	NYLON ASTM D5989	FREYSSI 1"	FINC-018

NOTE: ALL PVC SCH. 80 MATERIALS TO BE TEMPORARY FITTING



12C15 ASSEMBLY

							DRAWING TITLE: 12C15 INTERNAL TENDON W/COUPLER OVERALL ASSEMBLY			
							MATERIAL:	PROJECT: FDOT	DRAWING SIZE: 11x17	SCALE: 1:6
							DIMENSIONS: INCH[mm] mm FOR REFERENCE ONLY		DRAWING NUMBER: FINC-12C15-001	PART NUMBER:
							FREYSSINET, INC 44880 FALCON PLACE, SUITE 100 STERLING, VA 20166 Telephone: (703) 378-2500 Fax: (703) 378-2700			
							These drawings contain proprietary information restricted solely to this project and may not be reproduced in whole or part without the written expressed permission of: FREYSSINET, INC			
1	7/19/2013	JF	TG/BG	AM	FIRST REVISION					
0	10/1/2012	JF	TG/BG	AM	ORIGINAL					
REV.	DATE	DRAWN	CHECKED	APPROVED	REVISIONS					



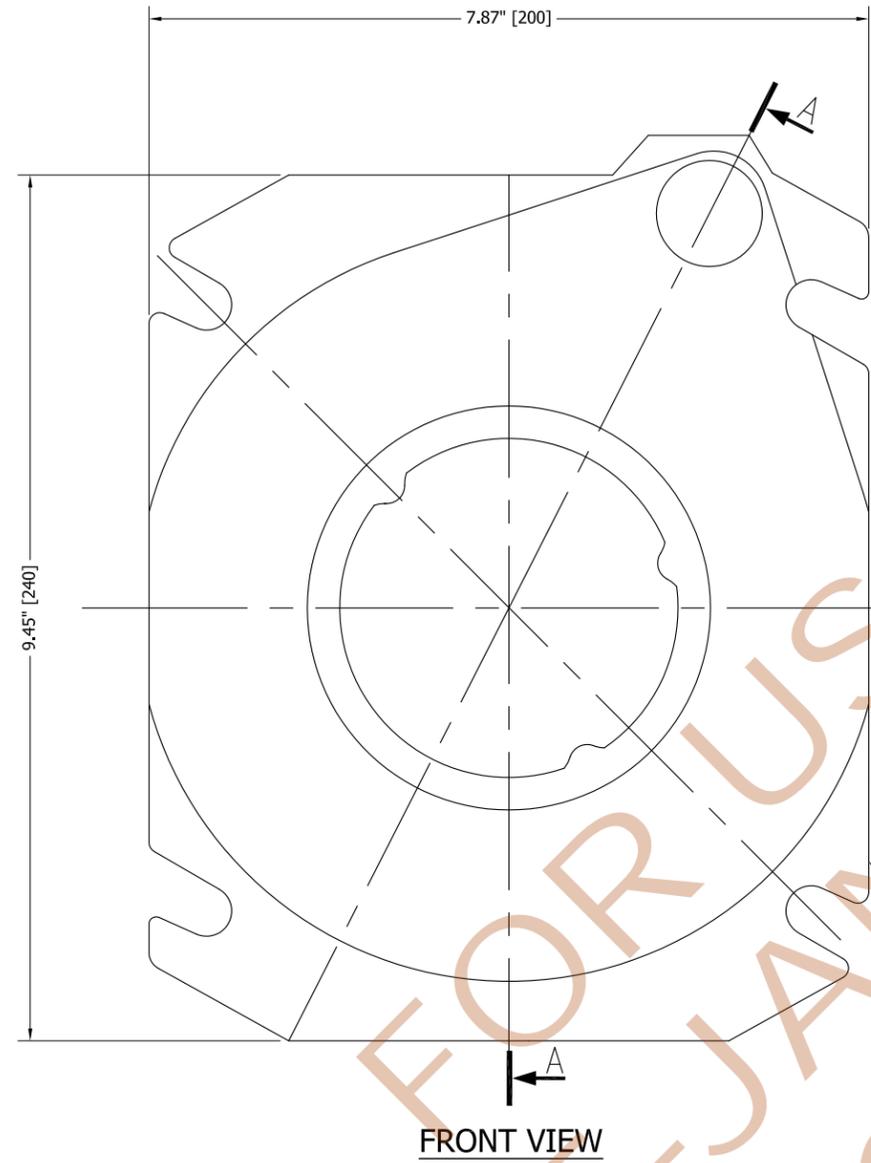
12C15 ASSEMBLY				
ITEM	DESCRIPTION	MATERIAL	PART # / LABEL	DWG REF.
	12C15 INTERNAL TENDON W/COUPLER OVERALL ASSEMBLY			FINC-12C15-001
	12C15 ANCHORAGE ASSEMBLY			FINC-12C15-002
01	12C15 ANCHORAGE (TRUMPLATE)	ASTM A48, 35B GALV. ASTMA123	FREYSSINET 12C15	FINC-12C15-003
02	12C15 ANCHOR BLOCK (WEDGE PLATE)	AISI C1045/C1050	12C15	FINC-12C15-004
03	12/13C15 GROUT CAP	NYLON ASTM D5989	FREYSSINET 12/13C15	FINC-12C15-005
04	12/13C15 76mm GTI DUCT	POLYPROPYLENE ASTM D4101	220300	FINC-12C15-006
06	12C15 SPIRAL REINFORCEMENT	STEEL GR. 60ksi; ASTM A615	N/A	FINC-12C15-008
07	12C15 HEAT SHRINK SLEEVE	POLYOLEFIN BACKING W/ ADHESIVE	PLA 90	FINC-12C15-009
08	WEDGE	12L14 ASTM A240	N/A	FINC-001
09	0.6" DIA. STRAND	STEEL ASTM A416	N/A	FINC-002
10	1/2" BALL VALVE	PVC SCH. 80 PRESSURE RATING ≥ 150 psi	N/A	FINC-003
11	3/4" BALL VALVE	PVC SCH. 80 PRESSURE RATING ≥ 150 psi	N/A	FINC-004
12	1" BALL VALVE	PVC SCH. 80 PRESSURE RATING ≥ 150 psi	N/A	FINC-005
14	1/2" NIPPLE	PVC SCH. 80 PRESSURE RATING ≥ 150 psi	N/A	FINC-007
15	3/4" NIPPLE	PVC SCH. 80 PRESSURE RATING ≥ 150 psi	N/A	FINC-008
16	1" NIPPLE	PVC SCH. 80 PRESSURE RATING ≥ 150 psi	N/A	FINC-009
19	3/8" BOLT	316 STAINLESS STEEL ASTM F593	F593	FINC-012
23	1/2" PLUG	NYLON ASTM D5989	FREYSSI 1/2"	FINC-016
25	1" PLUG	NYLON ASTM D5989	FREYSSI 1"	FINC-018

NOTE: ALL PVC SCH. 80 MATERIALS TO BE TEMPORARY FITTING

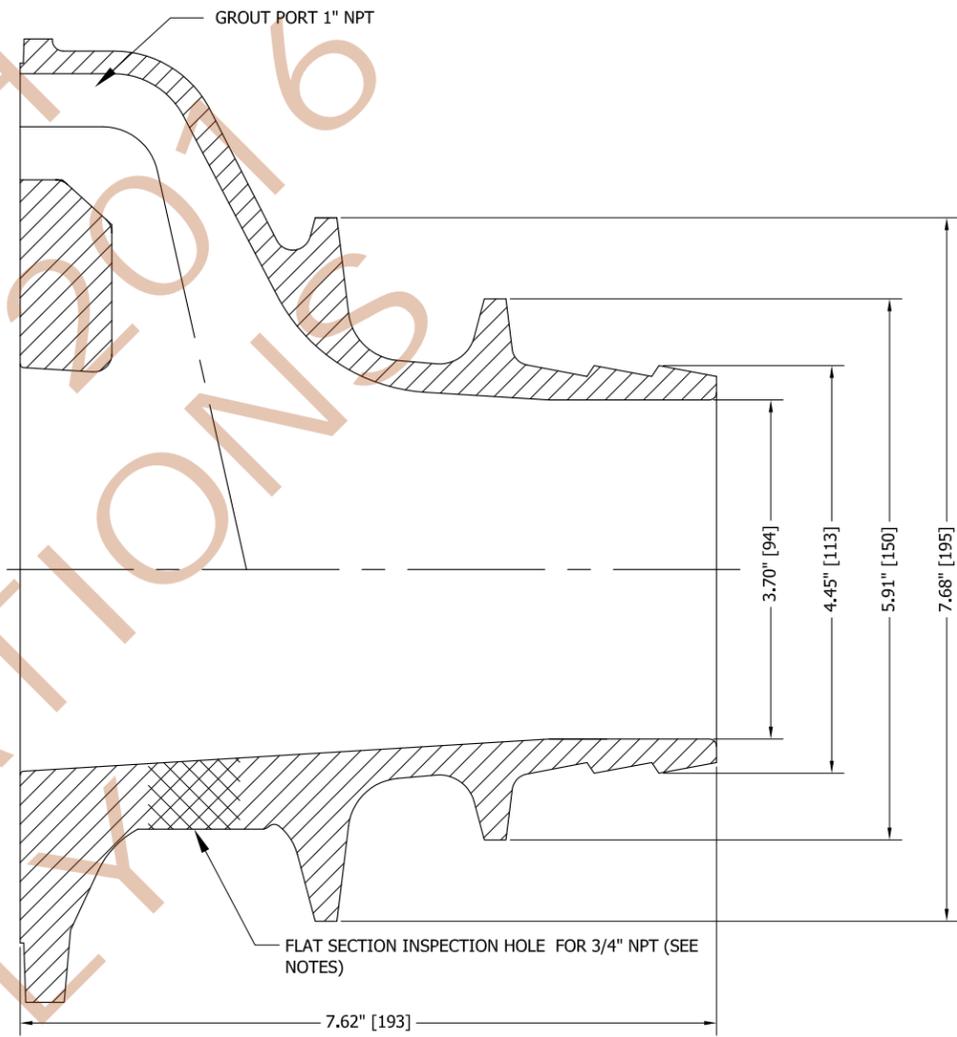
REV.	DATE	DRAWN	CHECKED	APPROVED	REVISIONS
1	7/19/2013	JF	TG/BG	AM	FIRST REVISION
0	10/1/2012	JF	TG/BG	AM	ORIGINAL



<b>DRAWING TITLE:</b> 12C15 ANCHORAGE ASSEMBLY			
<b>MATERIAL:</b>	<b>PROJECT:</b> FDOT	<b>DRAWING SIZE:</b> 11x17	<b>SCALE:</b> 1:6
<b>DIMENSIONS:</b> INCH[mm] mm FOR REFERENCE ONLY	<b>DRAWING NUMBER:</b> FINC-12C15-002	<b>PART NUMBER:</b>	
<b>FREYSSINET, INC</b>		44880 FALCON PLACE, SUITE 100 STERLING, VA 20166	
Copyright & Modification Reserved		Telephone: (703) 378-2500 Fax: (703) 378-2700	
These drawings contain proprietary information restricted solely to this project and may not be reproduced in whole or part without the written expressed permission of: FREYSSINET, INC			



**FRONT VIEW**



**SECTION A-A**

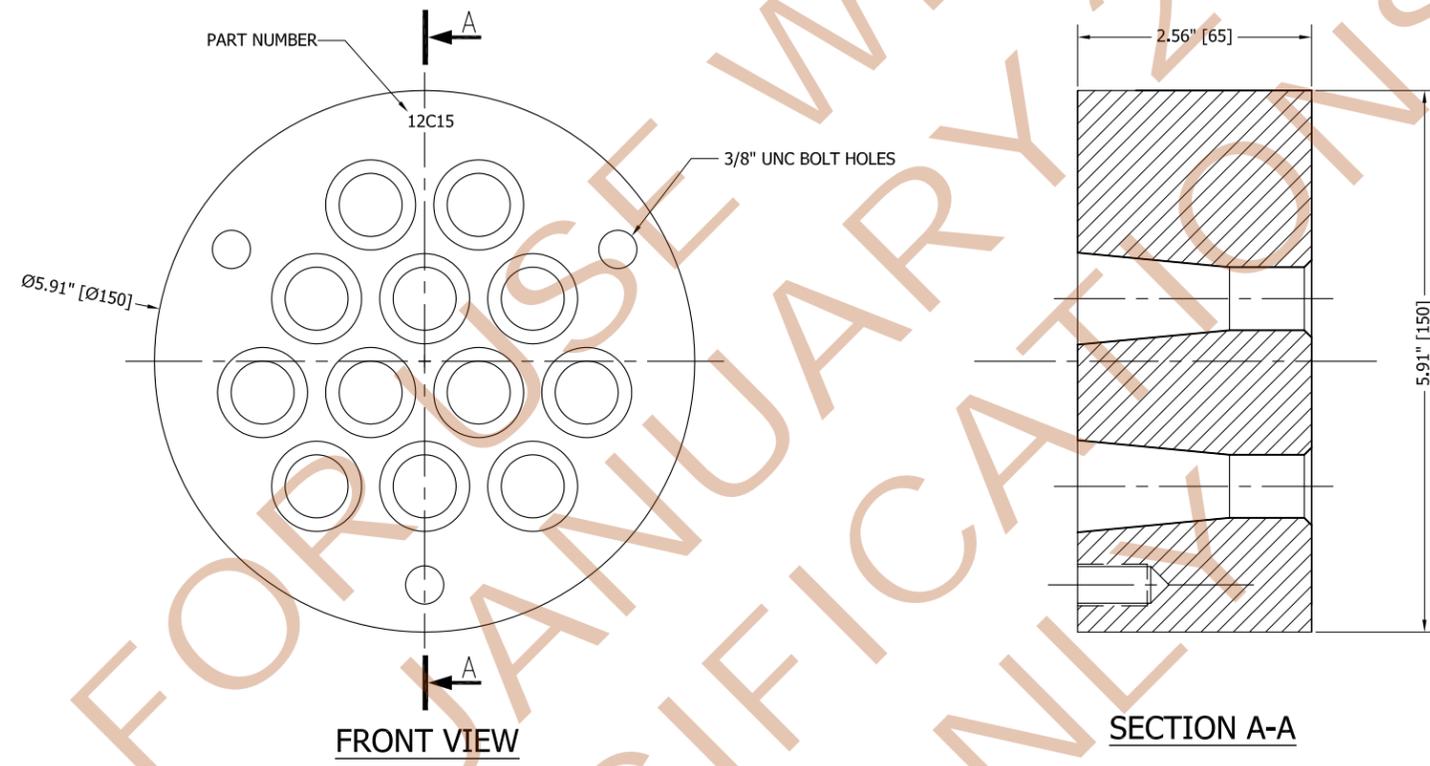
**NOTES:**

- MATERIAL: ASTM A48, 35B
- GALV. ASTM A123
- FLAT SECTION DRILLED & TAPPED FOR GROUTING & INSPECTION ONLY WHEN THERE IS NO ACCESS TO FRONT OF TRUMPLATE. OTHERWISE LEAVE AS IS.

REV.	DATE	DRAWN	CHECKED	APPROVED	REVISIONS
1	7/19/2013	JF	TG/BG	AM	FIRST REVISION
0	10/1/2012	JF	TG/BG	AM	ORIGINAL



<b>DRAWING TITLE:</b> 12C15 ANCHORAGE (TRUMPLATE)			
<b>MATERIAL:</b> ASTM A48, 35B GALV. ASTM A123	<b>PROJECT:</b> FDOT	<b>DRAWING SIZE:</b> 11x17	<b>SCALE:</b> 1:2
<b>DIMENSIONS:</b> INCH[mm] mm FOR REFERENCE ONLY	<b>DRAWING NUMBER:</b> FINC-12C15-003	<b>PART NUMBER:</b> FREYSSINET 12C15	
<b>FREYSSINET, INC</b> 44880 FALCON PLACE, SUITE 100 STERLING, VA 20166 Telephone: (703) 378-2500 Fax: (703) 378-2700 <small>These drawings contain proprietary information restricted solely to this project and may not be reproduced in whole or part without the written expressed permission of: FREYSSINET, INC</small>			

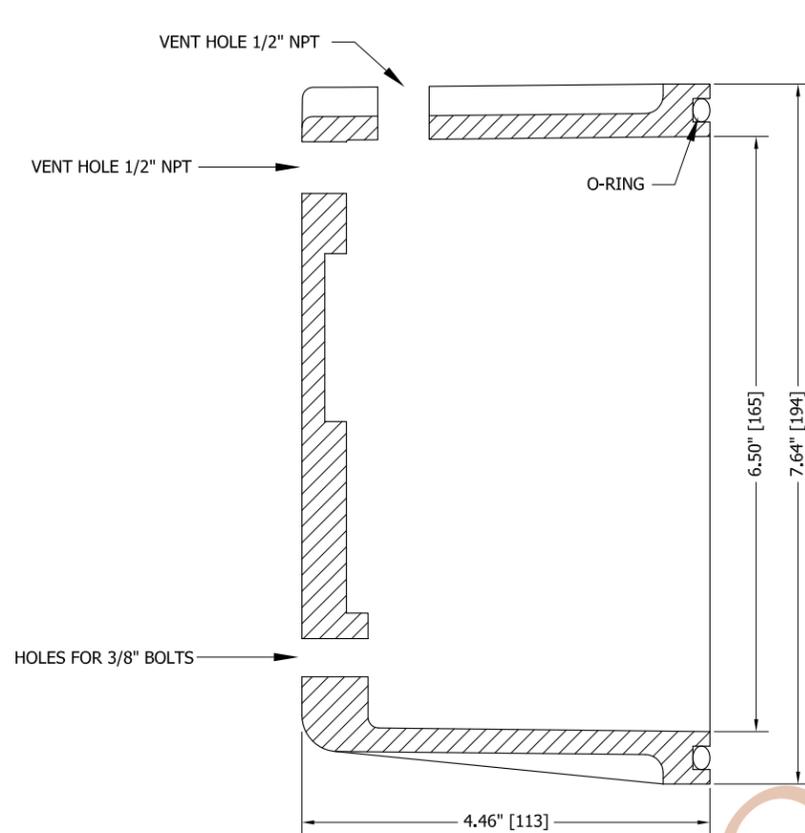


NOTE:  
 • MATERIAL: AISI C1045 / C1050

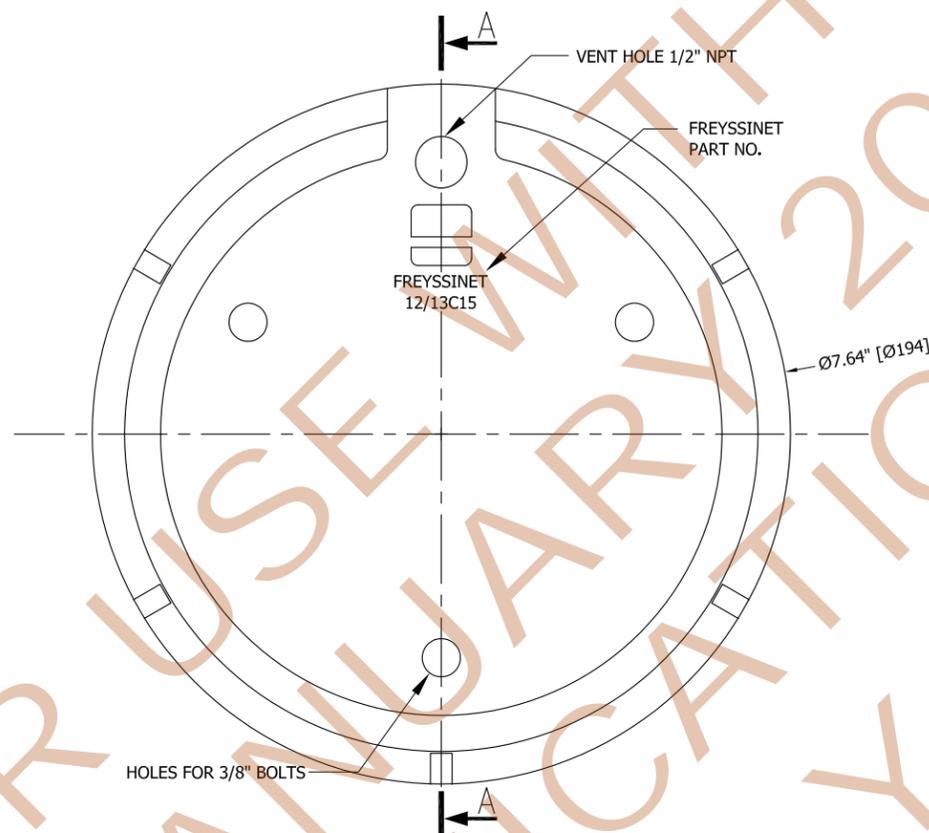
REV.	DATE	DRAWN	CHECKED	APPROVED	REVISIONS
1	7/19/2013	JF	TG/BG	AM	FIRST REVISION
0	10/1/2012	JF	TG/BG	AM	ORIGINAL



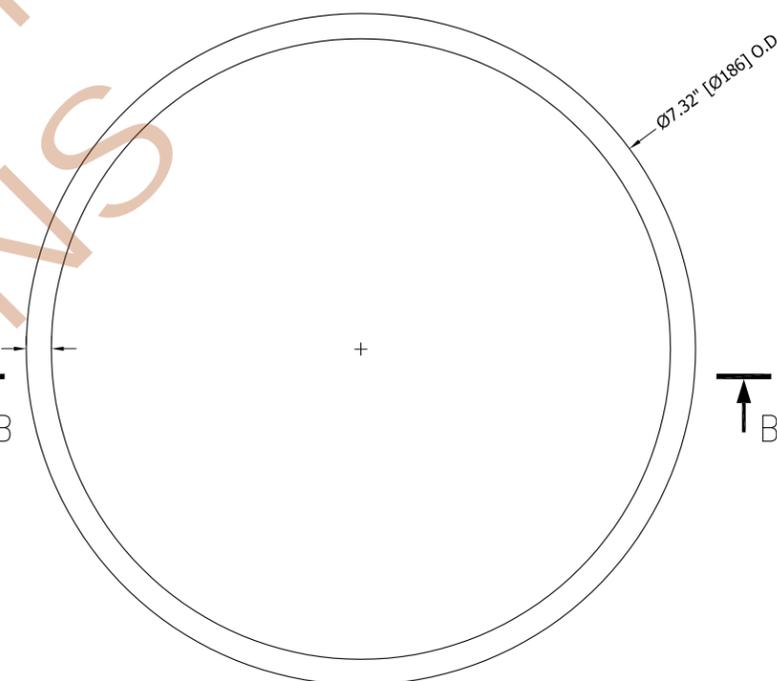
DRAWING TITLE: 12C15 ANCHOR BLOCK (WEDGE PLATE)			
MATERIAL: AISI C1045 / C1050	PROJECT: FDOT	DRAWING SIZE: 11x17	SCALE: 1:2
DIMENSIONS: INCH[mm] mm FOR REFERENCE ONLY		DRAWING NUMBER: FINC-12C15-004	PART NUMBER: 12C15
FREYSSINET, INC		44880 FALCON PLACE, SUITE 100 STERLING, VA 20166	
<small>           COPYRIGHT &amp; MODIFICATION RESERVED            Telephone: (703) 378-2500 Fax : (703) 378-2700            These drawings contain proprietary information restricted solely to this project and may not be reproduced in whole or part without the written expressed permission of : FREYSSINET, INC         </small>			



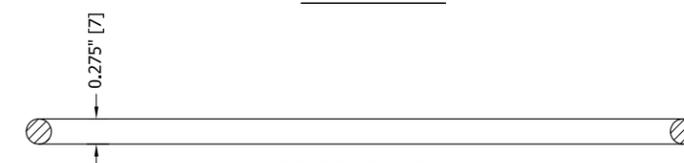
SECTION A-A



TOP VIEW



TOP VIEW



SECTION B-B

O-RING

GROUT CAP

NOTES:

- GROUT CAP MATERIAL: NYLON ASTM D5989
- USE O-RING IN GROOVE FOR SEALING AGAINST TRUMPLATE (DWG. FINC-12C15-002)
- USE 3/8" S.S. BOLT ASTM F593
- PRESSURE RATING = 150 psi
- GROUT CAP MEETS OR EXCEEDS FDOT REQUIREMENTS OF SECTION 960-2.2.2.1 AND 960-2.4.1

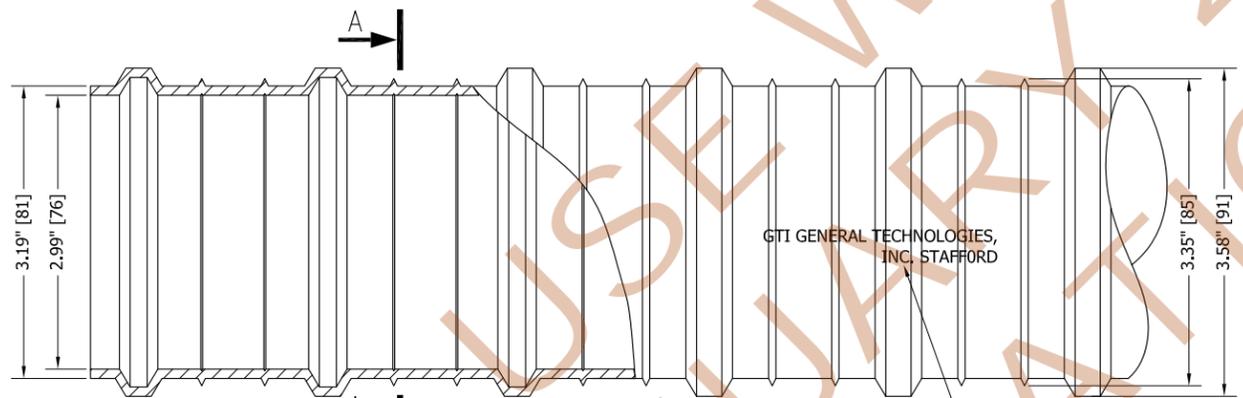
NOTE:

- O-RING MATERIAL: 65-75 DUROMETER BLACK NITRILE WITH A SHORE A DUROMETER = 72 AS PER ASTM D2240
- MEETS OR EXCEEDS FDOT REQUIREMENTS OF SECTION 960-2.2.1.7

REV.	DATE	DRAWN	CHECKED	APPROVED	REVISIONS
1	7/19/2013	JF	TG/BG	AM	FIRST REVISION
0	10/1/2012	JF	TG/BG	AM	ORIGINAL



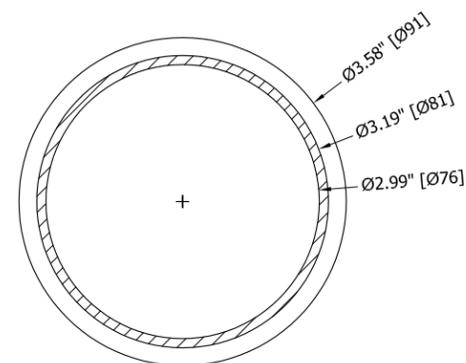
DRAWING TITLE: 12/13C15 GROUT CAP			
MATERIAL: NYLON ASTM D5989	PROJECT: FDOT	DRAWING SIZE: 11x17	SCALE: 1:2
DIMENSIONS: INCH[mm] mm FOR REFERENCE ONLY	DRAWING NUMBER: FINC-12C15-005	PART NUMBER: FREYSSINET 12/13C15	
FREYSSINET, INC 44880 FALCON PLACE, SUITE 100 STERLING, VA 20166 Telephone: (703) 378-2500 Fax: (703) 378-2700			
These drawings contain proprietary information restricted solely to this project and may not be reproduced in whole or part without the written expressed permission of: FREYSSINET, INC			



**ELEVATION**

GTI GENERAL TECHNOLOGIES, INC. STAFFORD

PRINT ON DUCT:  
 "GTI GENERAL TECHNOLOGIES, INC. STAFFOR, TEXAS X3F  
 U.S. & FOREIGN PATENT PENDING P.N. 220300 76mm"



**SECTION A-A**

**NOTES:**

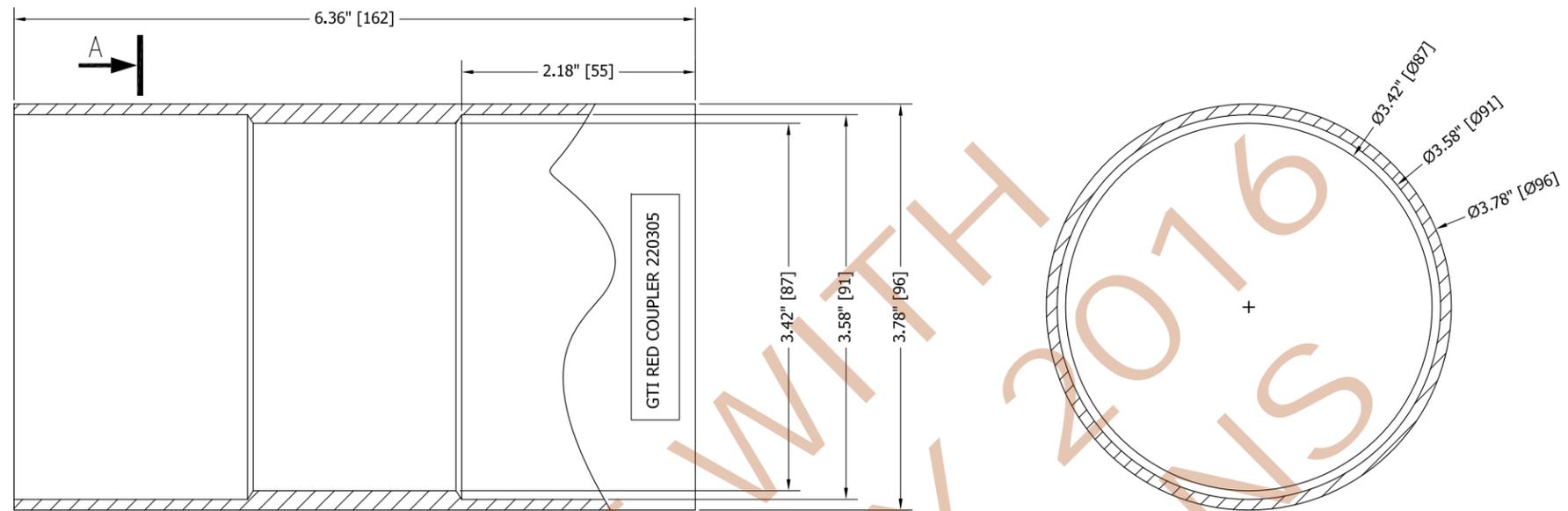
- MATERIAL: POLYPROPYLENE (ASTM D4101)
- STANDARD FIT FOR 12/13C15
- DUCT IS DELIVERED IN STRAIGHT SECTIONS AND IS NOT INTENDED TO BE COILED.
- DUCT MEETS OR EXCEEDS FDOT REQUIREMENTS OF SECTION 960-2.2.1.1 AND 960-2.4.4

PRELIMINARY SPECIFICATIONS ONLY FOR USE WITH 2016

REV.	DATE	DRAWN	CHECKED	APPROVED	REVISIONS
1	7/19/2013	JF	TG/BG	AM	FIRST REVISION
0	10/1/2012	JF	TG/BG	AM	ORIGINAL

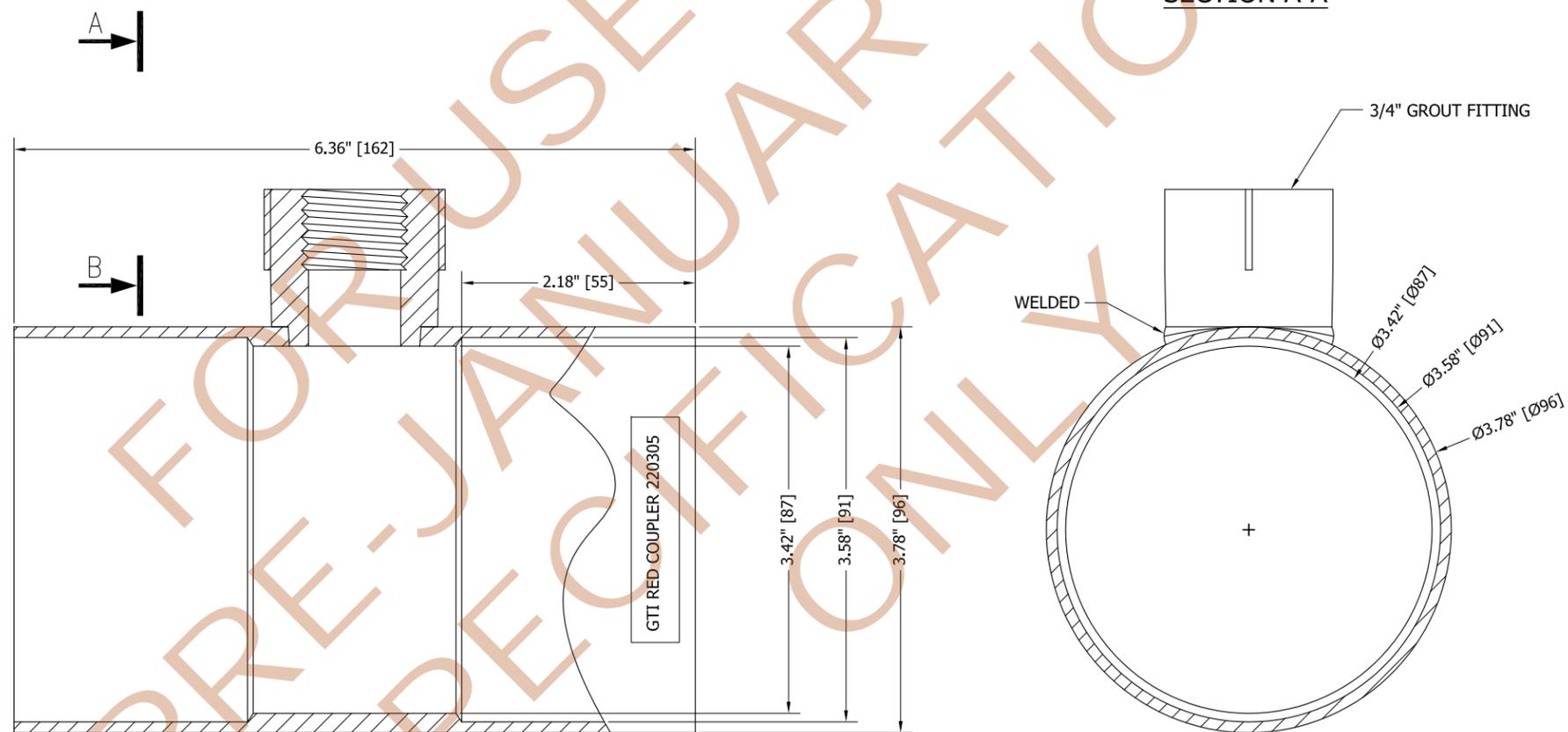


DRAWING TITLE: 12/13C15 76mm GTI DUCT			
MATERIAL: POLYPROPYLENE (ASTM D4101)	PROJECT: FDOT	DRAWING SIZE: 11x17	SCALE: 1:2
DIMENSIONS: INCH[mm] mm FOR REFERENCE ONLY		DRAWING NUMBER: FINC-12C15-006	PART NUMBER: 220300
FREYSSINET, INC 44880 FALCON PLACE, SUITE 100 STERLING, VA 20166		COPYRIGHT & MODIFICATION RESERVED Telephone: (703) 378-2500 Fax : (703) 378-2700	
These drawings contain proprietary information restricted solely to this project and may not be reproduced in whole or part without the written expressed permission of : FREYSSINET, INC			



SECTION / ELEVATION COUPLER W/O VENT

SECTION A-A



SECTION / ELEVATION COUPLER W/ VENT

SECTION B-B

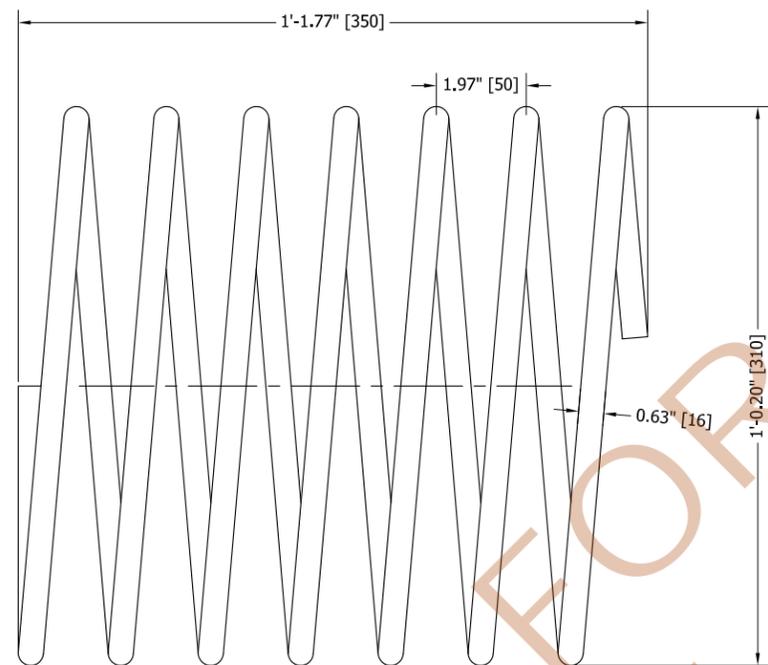
NOTES:

- MATERIAL: POLYPROPYLENE (ASTM D4101)
- STANDARD FIT FOR 76mm DUCT
- COUPLER MEETS OR EXCEEDS FDOT REQUIREMENTS OF SECTION 960-2.2.1.5 AND 960-2.4.4

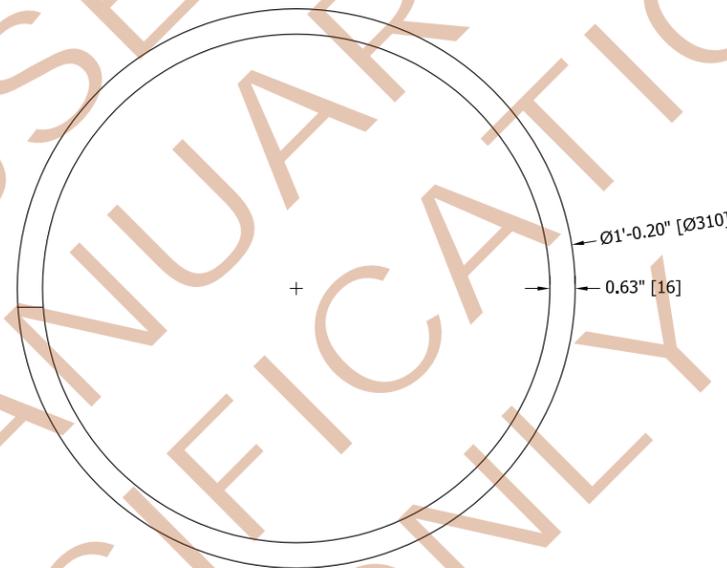
REV.	DATE	DRAWN	CHECKED	APPROVED	REVISIONS
1	7/19/2013	JF	TG/BG	AM	FIRST REVISION
0	10/1/2012	JF	TG/BG	AM	ORIGINAL



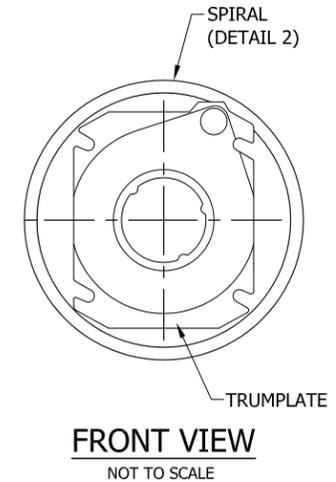
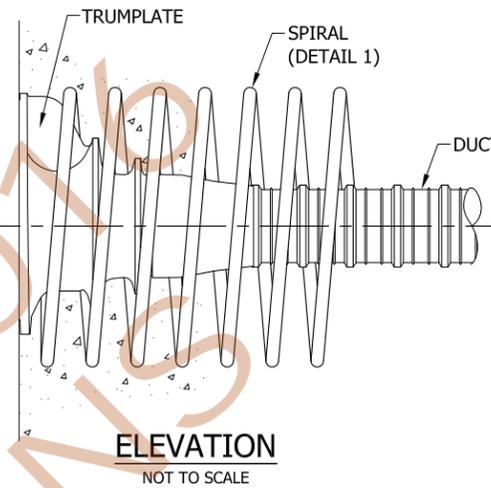
DRAWING TITLE: 12/13C15 76mm GTI SLIP-ON COUPLER W/ OR W/O VENT			
MATERIAL: POLYPROPYLENE (ASTM D4101)	PROJECT: FDOT	DRAWING SIZE: 11x17	SCALE: 1:1.5
DIMENSIONS: INCH[mm] mm FOR REFERENCE ONLY		DRAWING NUMBER: FINC-12C15-007	PART NUMBER: 220305
FREYSSINET, INC 44880 FALCON PLACE, SUITE 100 STERLING, VA 20166		COPYRIGHT & MODIFICATION RESERVED Telephone: (703) 378-2500 Fax: (703) 378-2700	
These drawings contain proprietary information restricted solely to this project and may not be reproduced in whole or part without the written expressed permission of: FREYSSINET, INC			



**DETAIL 1  
ELEVATION**



**DETAIL 2  
FRONT VIEW**



**SPIRAL REINFORCEMENT**

**NOTES:**

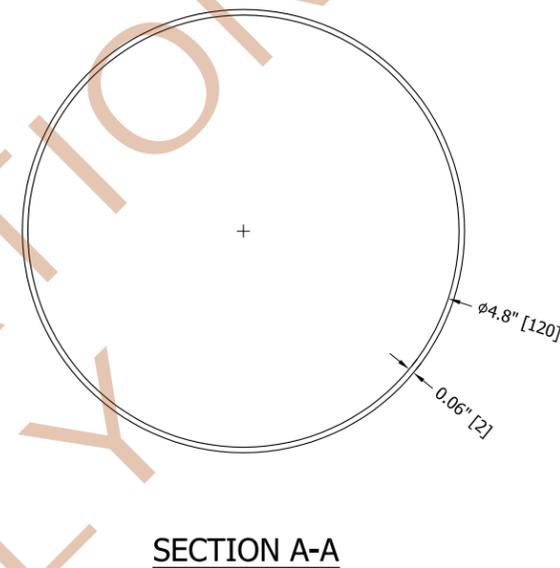
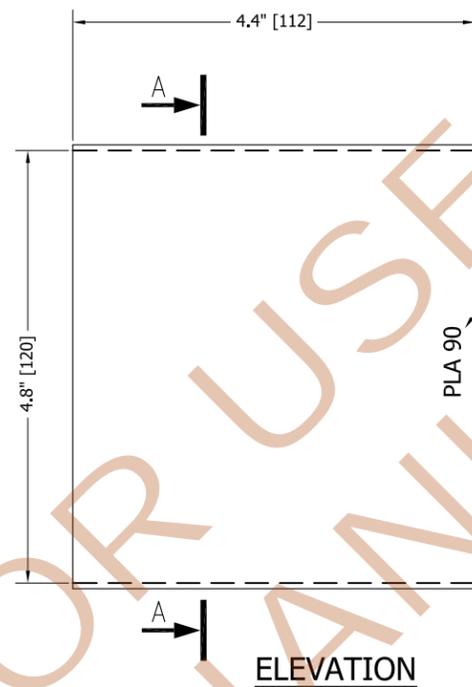
- MATERIAL: STEEL GR. 60ksi; ASTM A615
- #5 REBAR
- 7 TURNS IN TOTAL
- 1.97" PITCH
- $\phi$  12.2"

REV.	DATE	DRAWN	CHECKED	APPROVED	REVISIONS
1	7/19/2013	JF	TG/BG	AM	FIRST REVISION
0	10/1/2012	JF	TG/BG	AM	ORIGINAL



<b>DRAWING TITLE:</b> 12C15 SPIRAL REINFORCEMENT			
<b>MATERIAL:</b> STEEL GR. 60ksi; ASTM A615	<b>PROJECT:</b> FDOT	<b>DRAWING SIZE:</b> 11x17	<b>SCALE:</b> 1: 4
<b>DIMENSIONS:</b> INCH[mm] mm FOR REFERENCE ONLY	<b>DRAWING NUMBER:</b> FINC-12C15-008	<b>PART NUMBER:</b> N/A	
<b>FREYSSINET, INC</b> 44880 FALCON PLACE, SUITE 100 STERLING, VA 20166 Telephone: (703) 378-2500 Fax : (703) 378-2700 <small>These drawings contain proprietary information restricted solely to this project and may not be reproduced in whole or part without the written expressed permission of : FREYSSINET, INC</small>			

PROHIBITED FOR USE WITHOUT SPECIFIC CATION ONLY 2016



- NOTES:
- MATERIAL: POLYOLEFIN W/ ADHESIVE
  - TUBULAR SLEEVE DIAMETER: 4.8"[120mm] AS SUPPLIED  
3.3"[81mm] FULLY RECOVERED
  - HEAT SHRINK SLEEVE MEETS OR EXCEEDS FDOT REQUIREMENTS OF SECTION 960-2.2.1.8

REV.	DATE	DRAWN	CHECKED	APPROVED	REVISIONS
1	7/19/2013	JF	TG/BG	AM	FIRST REVISION
0	10/1/2012	JF	TG/BG	AM	ORIGINAL



DRAWING TITLE: 12/13C15 HEAT SHRINK SLEEVE			
MATERIAL: POLYOLEFIN BACKING W/ ADHESIVE	PROJECT: FDOT	DRAWING SIZE: 11x17	SCALE: 1:2
DIMENSIONS: INCH[mm] mm FOR REFERENCE ONLY		DRAWING NUMBER: FINC-12C15-009	PART NUMBER: PLA 90
FREYSSINET, INC		44880 FALCON PLACE, SUITE 100 STERLING, VA 20166	
<small>COPYRIGHT &amp; MODIFICATION RESERVED Telephone: (703) 378-2500 Fax : (703) 378-2700</small>			
<small>These drawings contain proprietary information restricted solely to this project and may not be reproduced in whole or part without the written expressed permission of : FREYSSINET, INC</small>			