

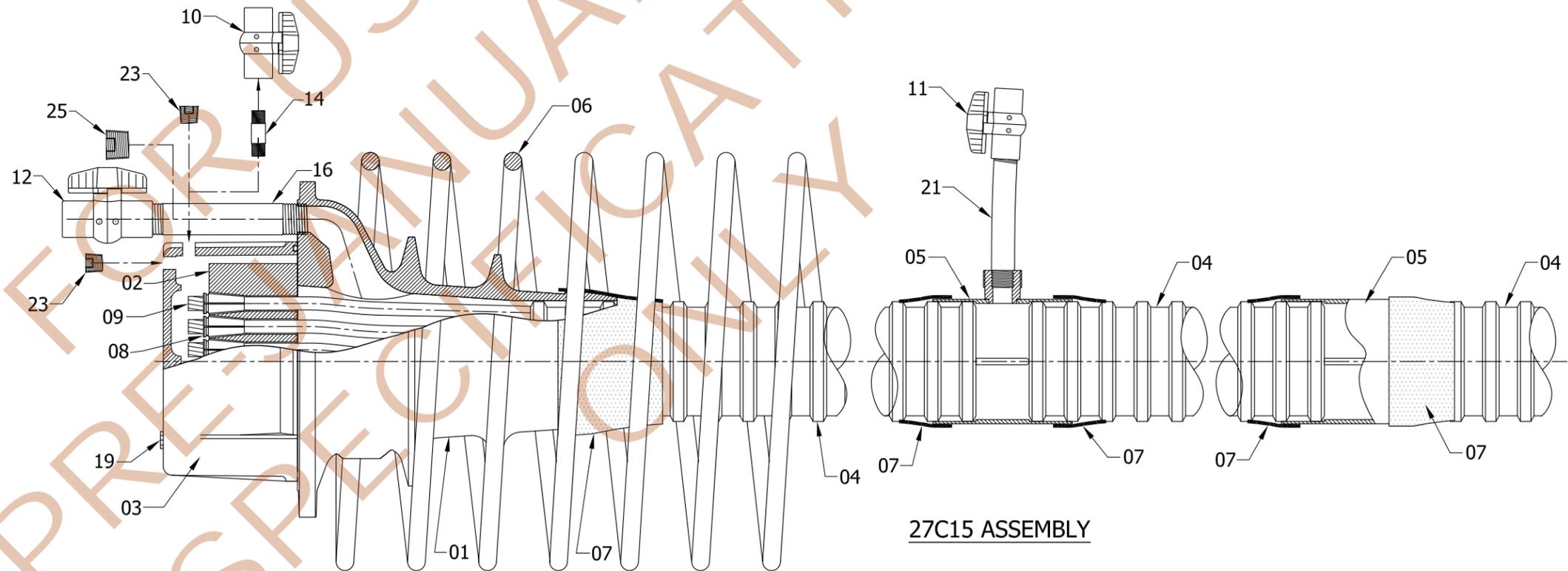
**27C15 INSTALLATION PROCEDURE:**

- 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.

27C15 ASSEMBLY				
ITEM	DESCRIPTION	MATERIAL	PART # / LABEL	DWG REF.
	27C15 INTERNAL TENDON W/COUPLER OVERALL ASSEMBLY			FINC-27C15-001
	27C15 ANCHORAGE ASSEMBLY			FINC-27C15-002
01	27C15 ANCHORAGE (TRUMPLATE)	ASTM A536, GR. 80-55-06; GALV. ASTM A123	FREYSSINET 27C15	FINC-27C15-003
02	27C15 ANCHOR BLOCK (WEDGE PLATE)	AISI C1045/C1050	27C15	FINC-27C15-004
03	27/31C15 GROUT CAP	NYLON ASTM D5989	FREYSSINET 27/31C15	FINC-27C15-005
04	27C15 115mm GTI DUCT	POLYPROPYLENE ASTM D4101	220460	FINC-27C15-006
05	27C15 115mm GTI SLIP-ON COUPLER W/ OR W/O VENT	POLYPROPYLENE ASTM D4101	220465	FINC-27C15-007
06	27C15 SPIRAL REINFORCEMENT	STEEL GR. 60 ksi; ASTM A615	N/A	FINC-27C15-008
07	27C15 HEAT SHRINK SLEEVE	POLYOLEFIN BACKING W/ ADHESIVE	PLA 125	FINC-27C15-009
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



27C15 ASSEMBLY

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

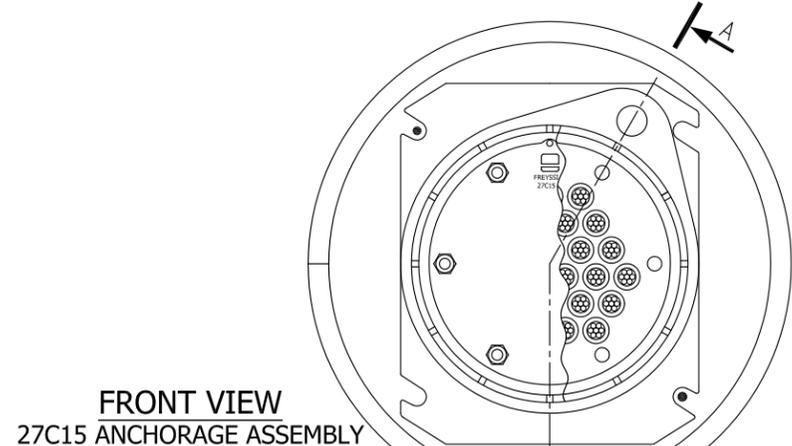


**DRAWING TITLE:**  
27C15 INTERNAL TENDON W/COUPLER OVERALL ASSEMBLY

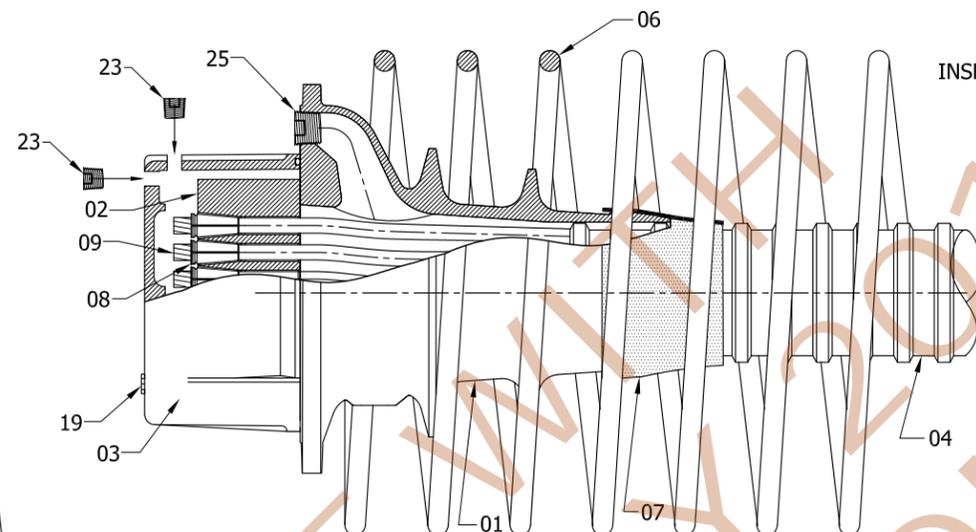
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<b>DIMENSIONS:</b> INCH[mm] mm FOR REFERENCE ONLY	<b>DRAWING NUMBER:</b> FINC-27C15-001	<b>PART NUMBER:</b>	

**FREYSSINET, INC** 44880 FALCON PLACE, SUITE 100 STERLING, VA 20166 Telephone: (703) 378-2500 Fax: (703) 378-2700

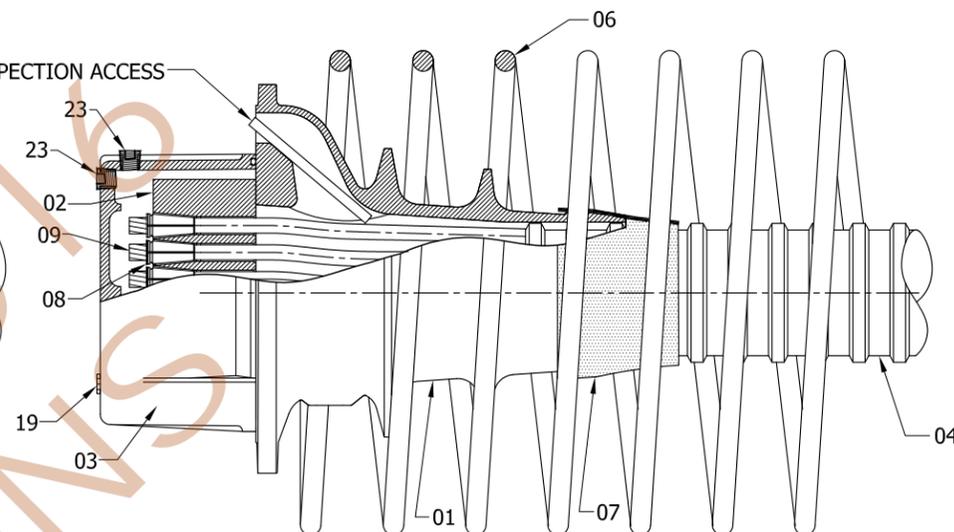
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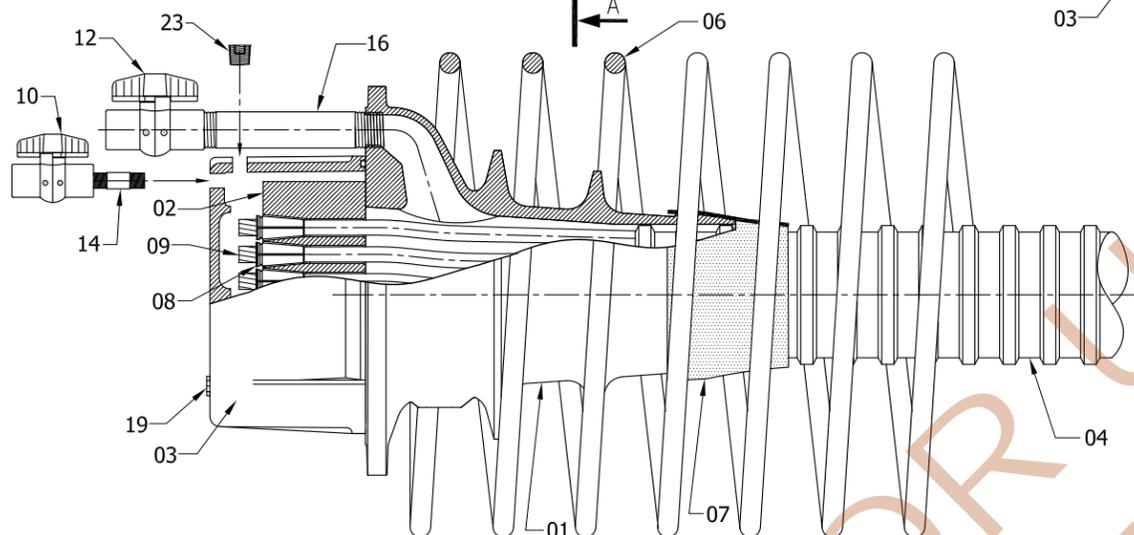
FRONT VIEW  
27C15 ANCHORAGE ASSEMBLY



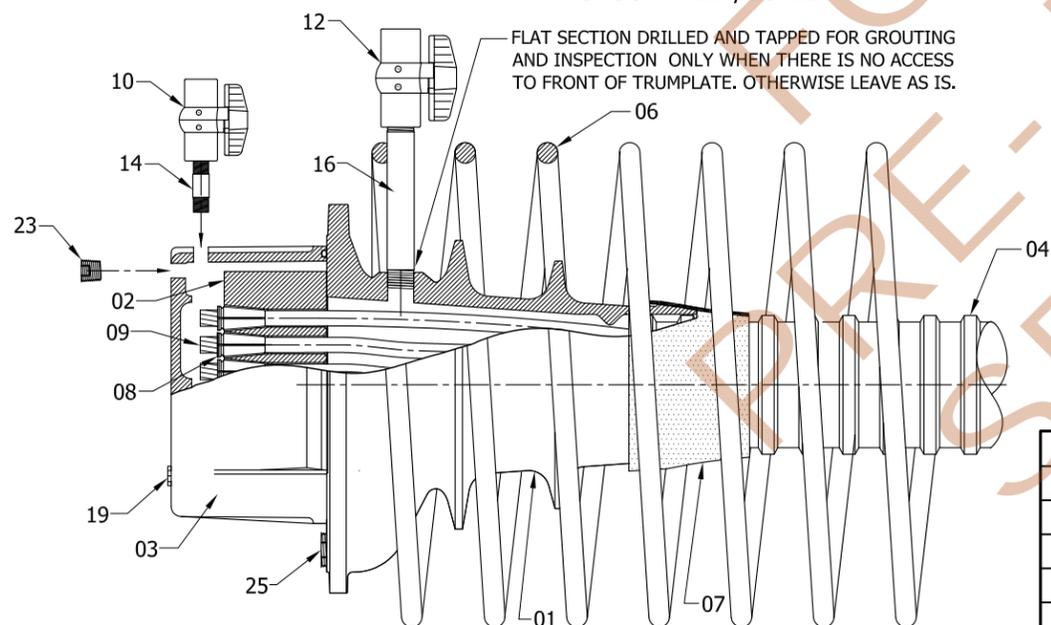
PARTIAL SECTION A-A  
AFTER GROUTING



PARTIAL SECTION A-A  
GROUT INSPECTION



PARTIAL SECTION A-A  
GROUT INLET/OUTLET



PARTIAL SECTION A-A  
GROUT & INSPECT FROM TOP

FLAT SECTION DRILLED AND TAPPED FOR GROUTING AND INSPECTION ONLY WHEN THERE IS NO ACCESS TO FRONT OF TRUMPLATE. OTHERWISE LEAVE AS IS.

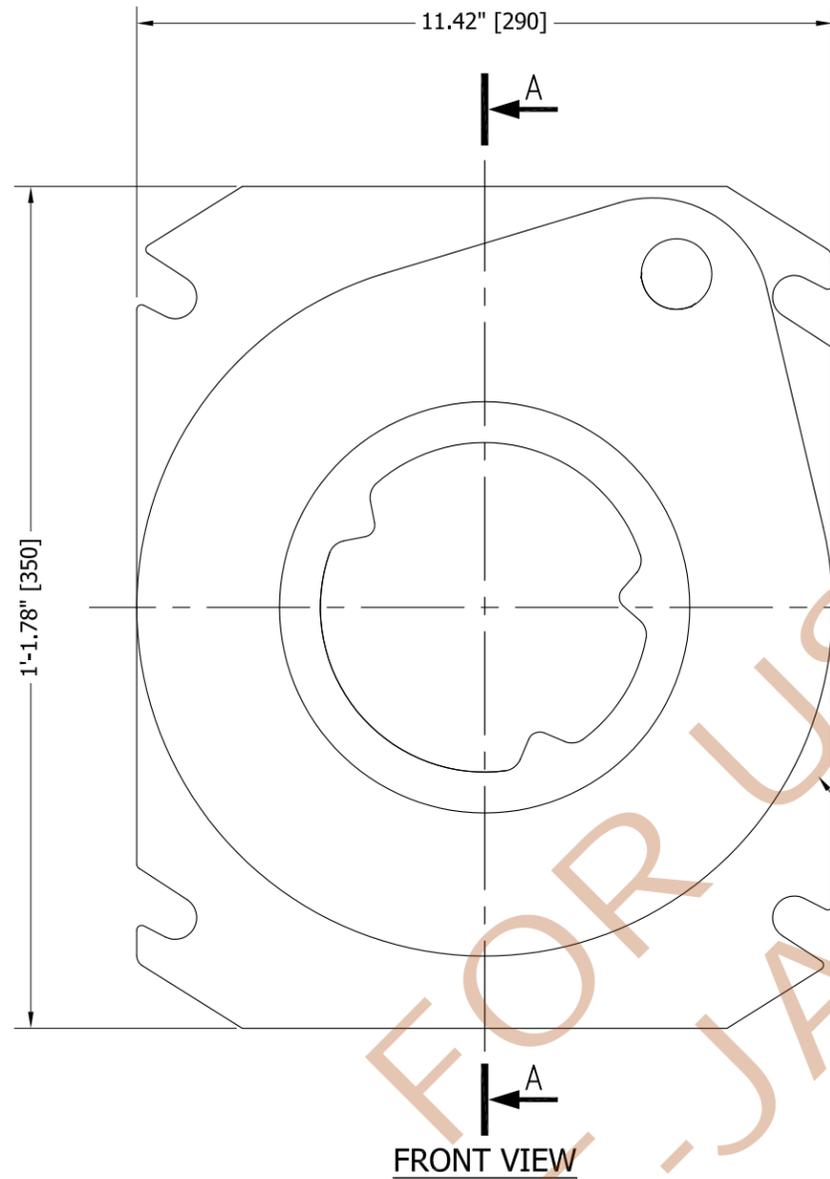
27C15 ASSEMBLY				
ITEM	DESCRIPTION	MATERIAL	PART # / LABEL	DWG REF.
	27C15 INTERNAL TENDON W/COUPLER OVERALL ASSEMBLY			FINC-27C15-001
	27C15 ANCHORAGE ASSEMBLY			FINC-27C15-002
01	27C15 ANCHORAGE (TRUMPLATE)	ASTM A536, GR. 80-55-06; GALV. ASTM A123	FREYSSINET 27C15	FINC-27C15-003
02	27C15 ANCHOR BLOCK (WEDGE PLATE)	AISI C1045/C1050	27C15	FINC-27C15-004
03	27/31C15 GROUT CAP	NYLON ASTM D5989	FREYSSINET 27/31C15	FINC-27C15-005
04	27C15 115mm GTI DUCT	POLYPROPYLENE ASTM D4101	220460	FINC-27C15-006
06	27C15 SPIRAL REINFORCEMENT	STEEL GR. 60 ksi; ASTM A615	N/A	FINC-27C15-008
07	27C15 HEAT SHRINK SLEEVE	POLYOLEFIN BACKING W/ ADHESIVE	PLA 125	FINC-27C15-009
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
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
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

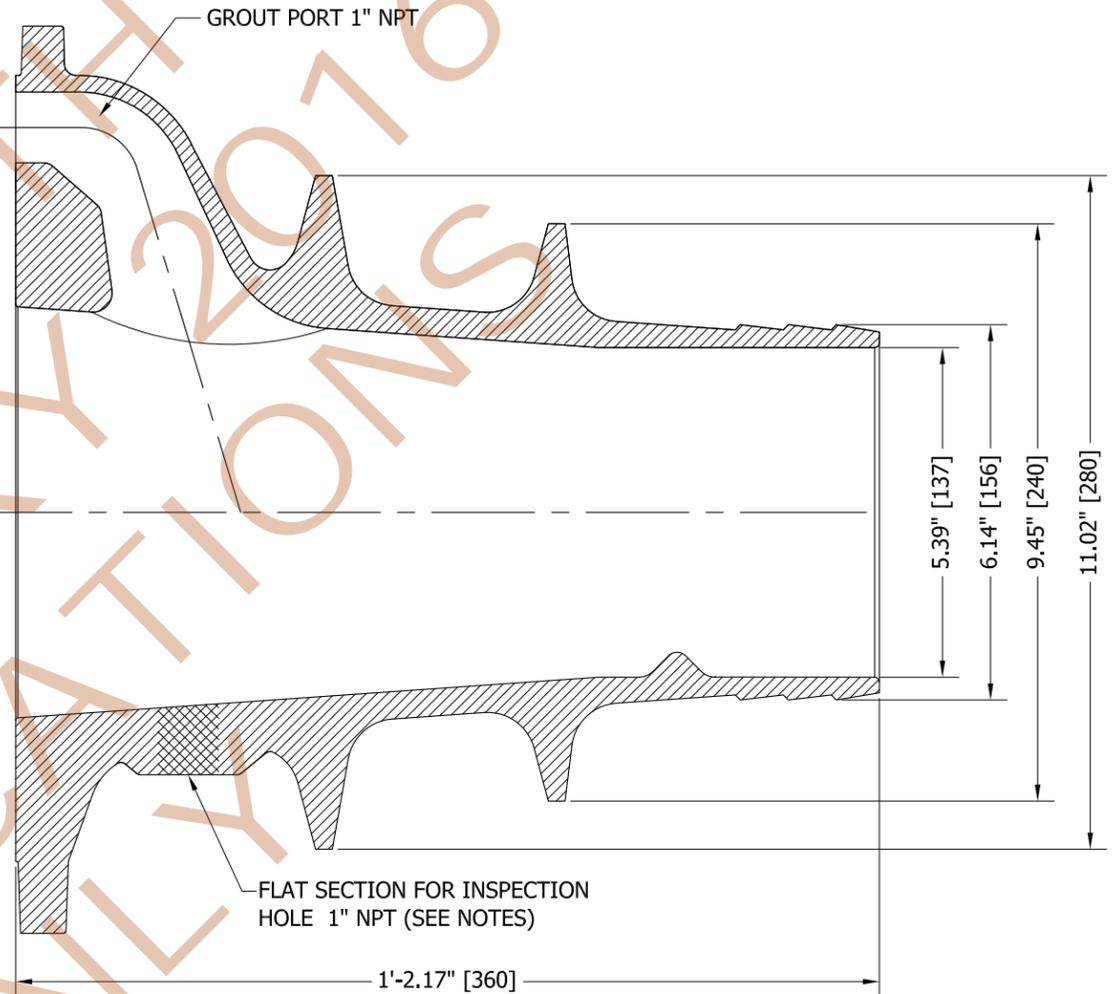


DRAWING TITLE: 27C15 ANCHORAGE ASSEMBLY			
MATERIAL:	PROJECT: FDOT	DRAWING SIZE: 11x17	SCALE: 1:7
DIMENSIONS: INCH[mm] mm FOR REFERENCE ONLY		DRAWING NUMBER: FINC-27C15-002	PART NUMBER:
FREYSSINET, INC		44880 FALCON PLACE, SUITE 100 STERLING, VA 20166	
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FRONT VIEW

PART NUMBER LOCATED  
ON SIDE OF TRUMPLATE:  
"FREYSSINET 27C15"



SECTION A-A

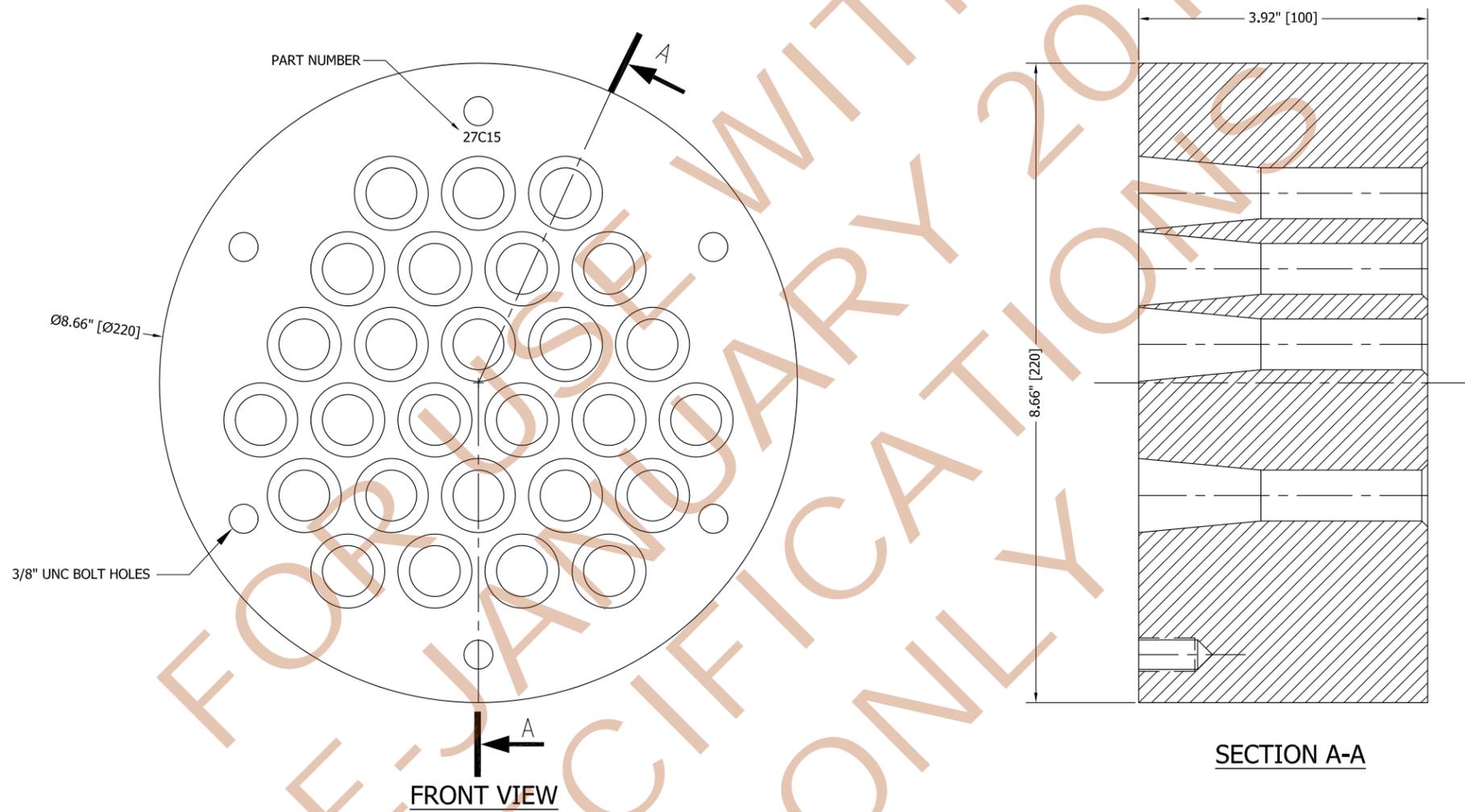
NOTES:

- MATERIAL: ASTM A536, GR. 80-55-06
- GALV. ASTM A123
- FLAT SECTION DRILLED AND TAPPED FOR GROUTING AND 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



DRAWING TITLE: 27C15 ANCHORAGE (TRUMPLATE)			
MATERIAL: ASTM A536, GR 80-55-06; GALV. ASTM A123	PROJECT: FDOT	DRAWING SIZE: 11x17	SCALE: 1:3
DIMENSIONS: INCH[mm] mm FOR REFERENCE ONLY		DRAWING NUMBER: FINC-27C15-003	PART NUMBER: FREYSSINET 27C15
FREYSSINET, INC		44880 FALCON PLACE, SUITE 100 STERLING, VA 20166	
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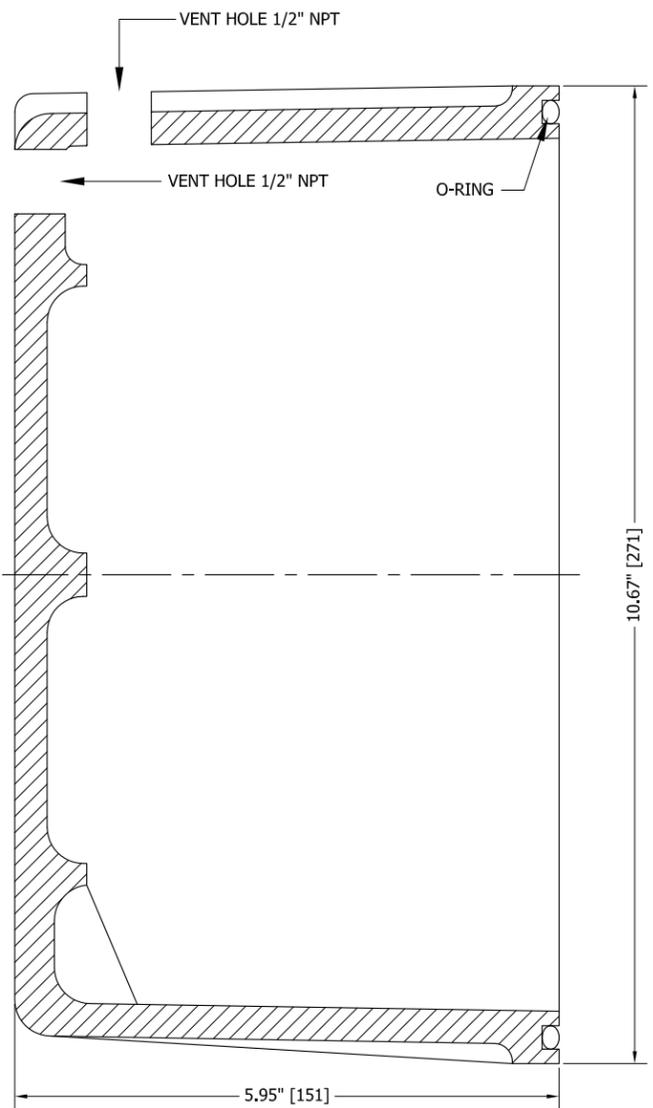


NOTE:  
 • MATERIAL: AISI C1045 / C1050

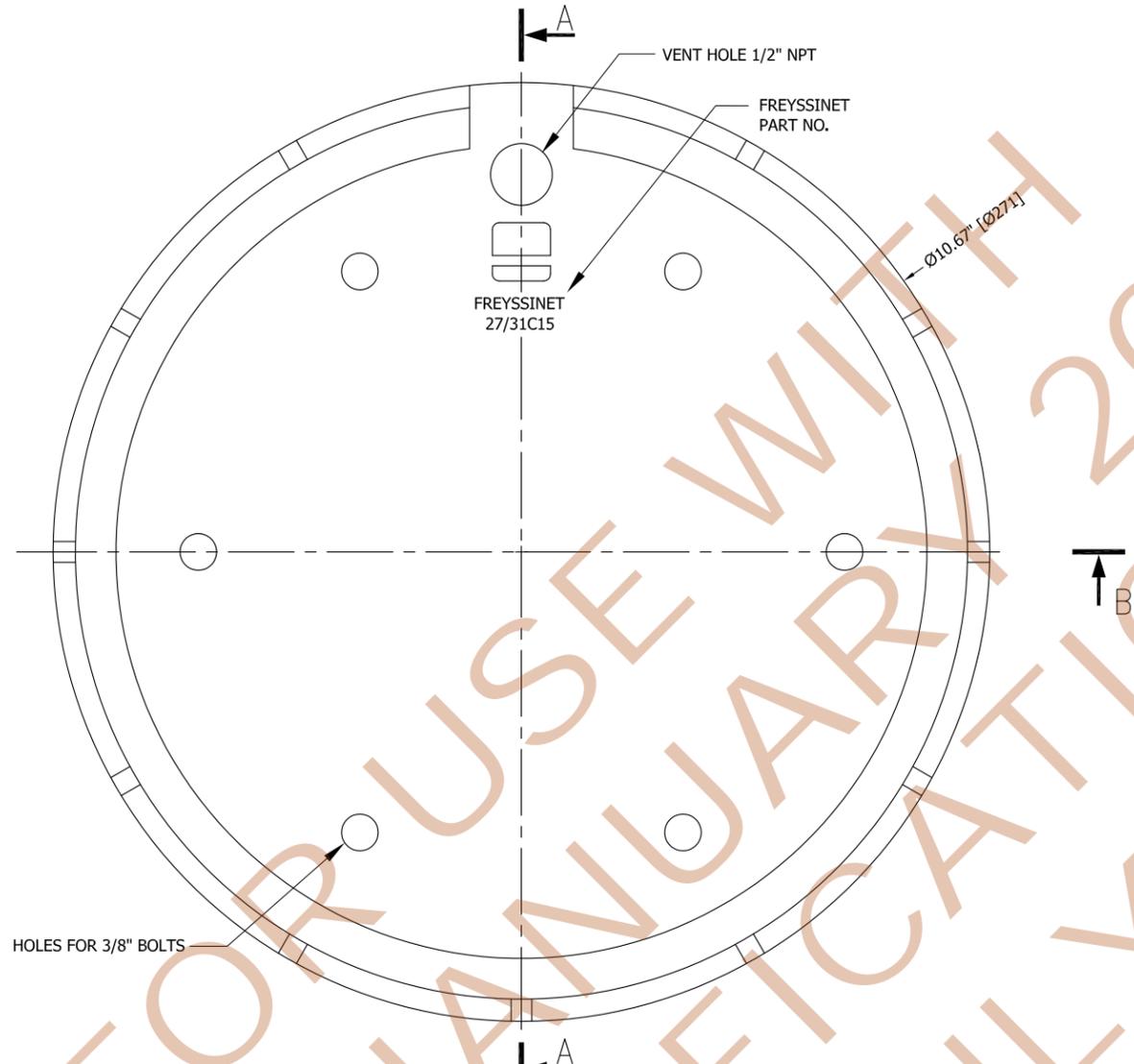
REV.	DATE	DRAWN	CHECKED	APPROVED	REVISIONS
1	7/19/2013	JF	TG/BG	AM	FIRST REVISION
0	10/1/2012	JF	TG/BG	AM	ORIGINAL



DRAWING TITLE: 27C15 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-27C15-004	PART NUMBER: 27C15
FREYSSINET, INC		44880 FALCON PLACE, SUITE 100 STERLING, VA 20166 Telephone: (703) 378-2500 Fax: (703) 378-2700	
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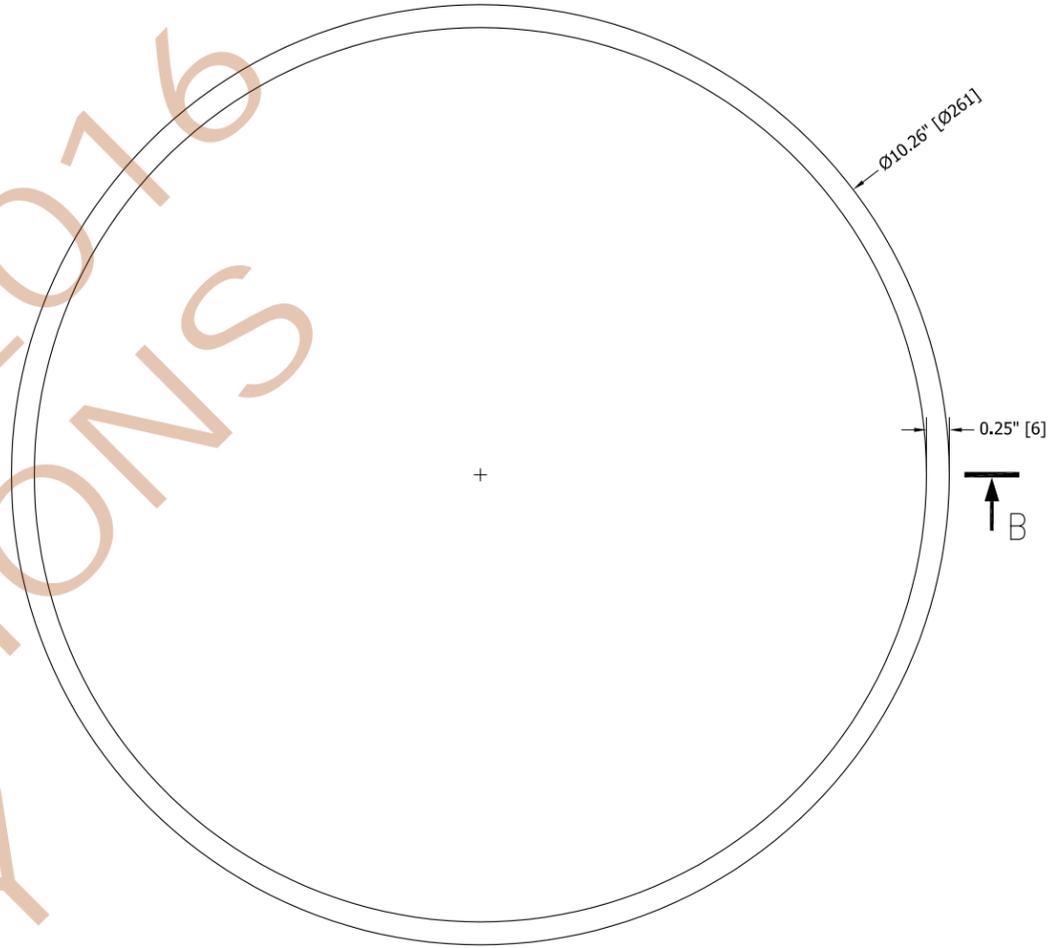


SECTION A-A

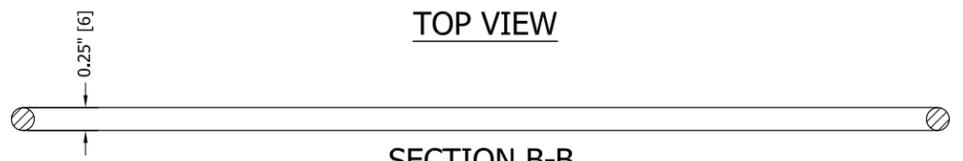


TOP VIEW

GROUT CAP



TOP VIEW



SECTION B-B

O-RING

NOTES:

- MATERIAL: NYLON ASTM D5989
- USE O-RING IN GROOVE FOR SEALING AGAINST TRUMPLATE (DWG. FINC-27C15-002)
- USE 3/8" S.S. BOLT ASTM F593
- PRESSURE RATING = 150 psi
- GROUT CAP MEETS OR EXCEEDS FDOT REQUIREMENTS OF SECTIONS 960-2.2.2.1 AND 960-2.4.1

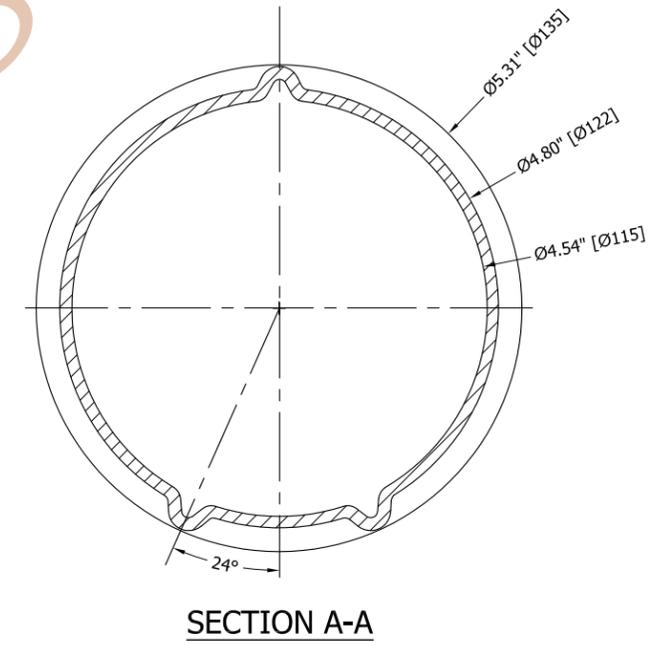
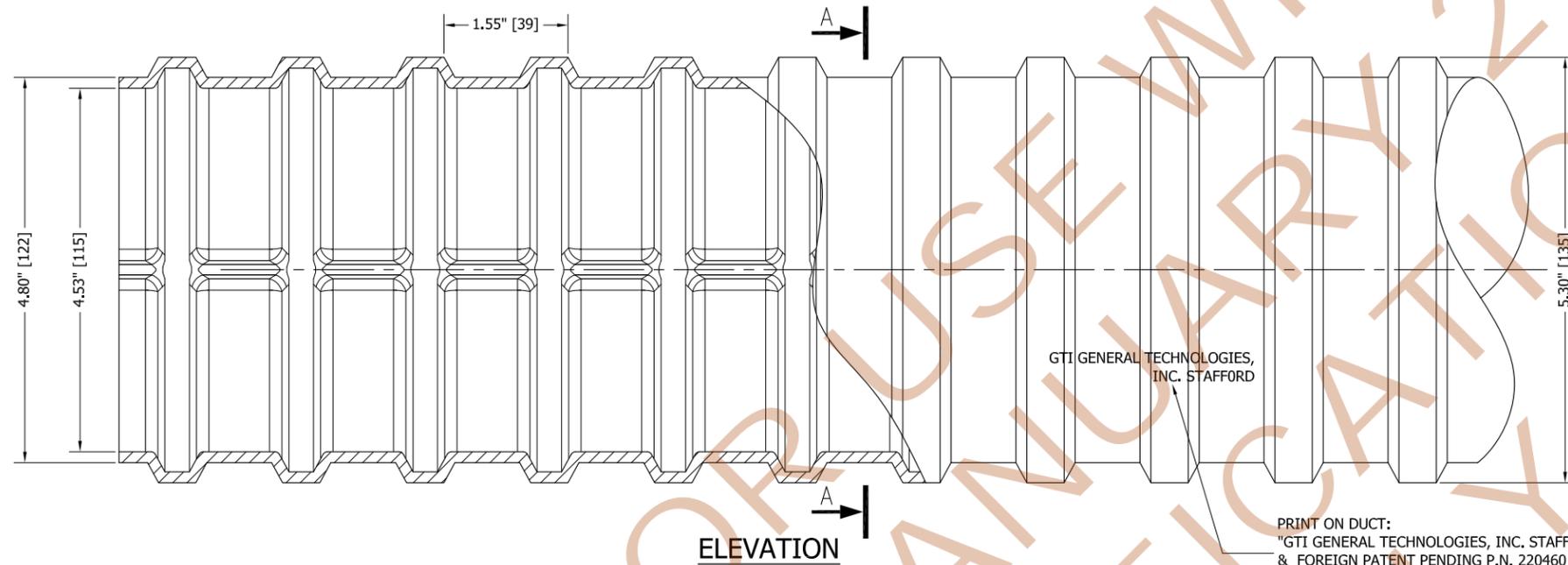
NOTES:

- 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: 27C15 GROUT CAP			
MATERIAL: NYLON ASTM D5989	PROJECT: FDOT	DRAWING SIZE: 11x17	SCALE: 1:2
DIMENSIONS: INCH[mm] mm FOR REFERENCE ONLY		DRAWING NUMBER: FINC-27C15-005	PART NUMBER: FREYSSINET 27/31C15
FREYSSINET, INC 44880 FALCON PLACE, SUITE 100 STERLING, VA 20166 Telephone: (703) 378-2500 Fax: (703) 378-2700			
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GTI GENERAL TECHNOLOGIES,  
INC. STAFFORD

PRINT ON DUCT:  
"GTI GENERAL TECHNOLOGIES, INC. STAFFOR, TEXAS X3F U.S.  
& FOREIGN PATENT PENDING P.N. 220460 115mm"

**ELEVATION**

**SECTION A-A**

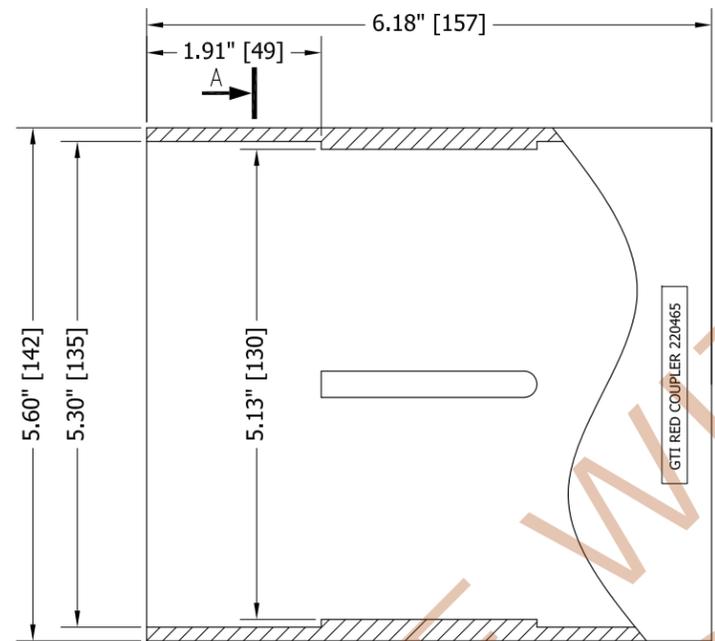
**NOTES:**

- MATERIAL: POLYPROPYLENE (ASTM D4101)
- STANDARD FIT FOR 27C15
- DUCT IS DELIVERED IN STRAIGHT SECTIONS AND IS NOT INTENDED TO BE COILED.
- DUCT MEETS OR EXCEEDS FDOT REQUIREMENTS OF SECTIONS 960-2.2.1.1 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



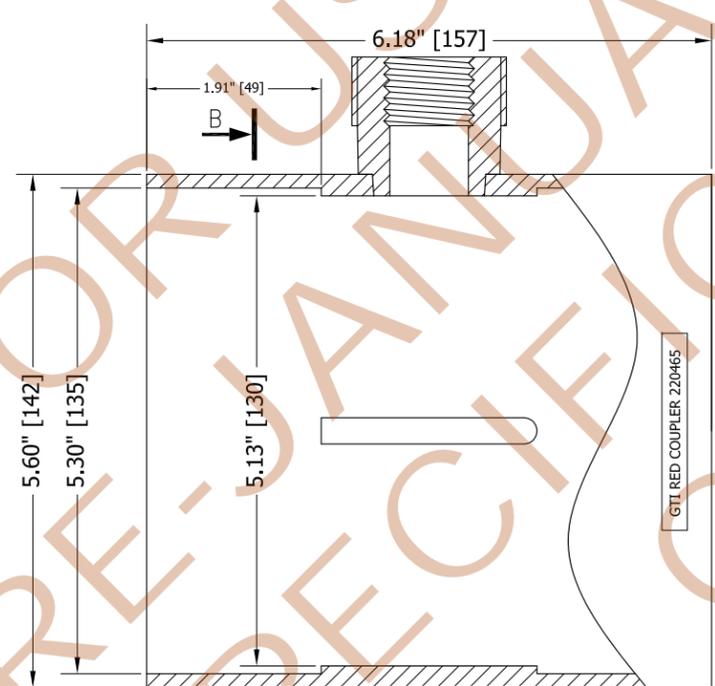
DRAWING TITLE: 27C15 115mm GTI DUCT			
MATERIAL: POLYPROPYLENE (ASTM D4101)	PROJECT: FDOT	DRAWING SIZE: 11x17	SCALE: 1:2
DIMENSIONS: INCH[mm] mm FOR REFERENCE ONLY		DRAWING NUMBER: FINC-27C15-006	PART NUMBER: 220460
FREYSSINET, INC		44880 FALCON PLACE, SUITE 100 STERLING, VA 20166 Telephone: (703) 378-2500 Fax: (703) 378-2700	
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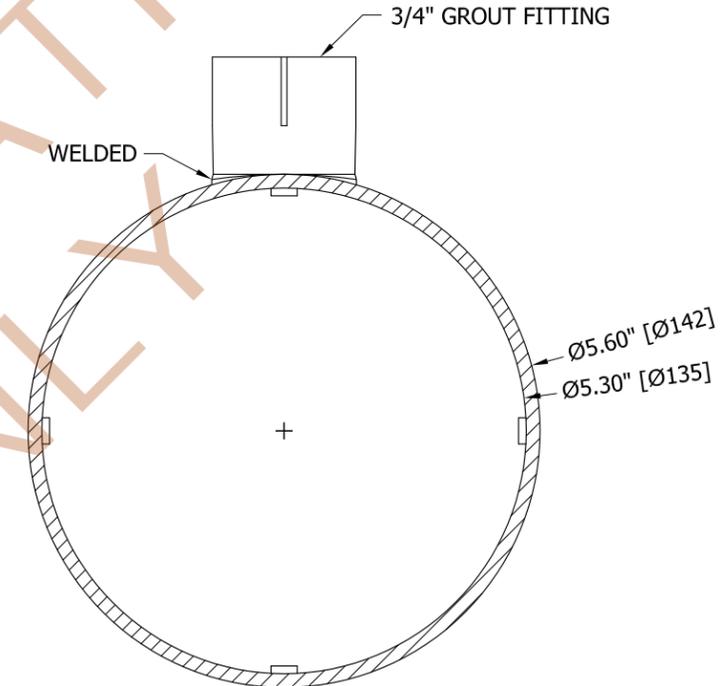
SECTION / ELEVATION COUPLER W/O VENT



SECTION A-A



SECTION / ELEVATION COUPLER W/ VENT



SECTION B-B

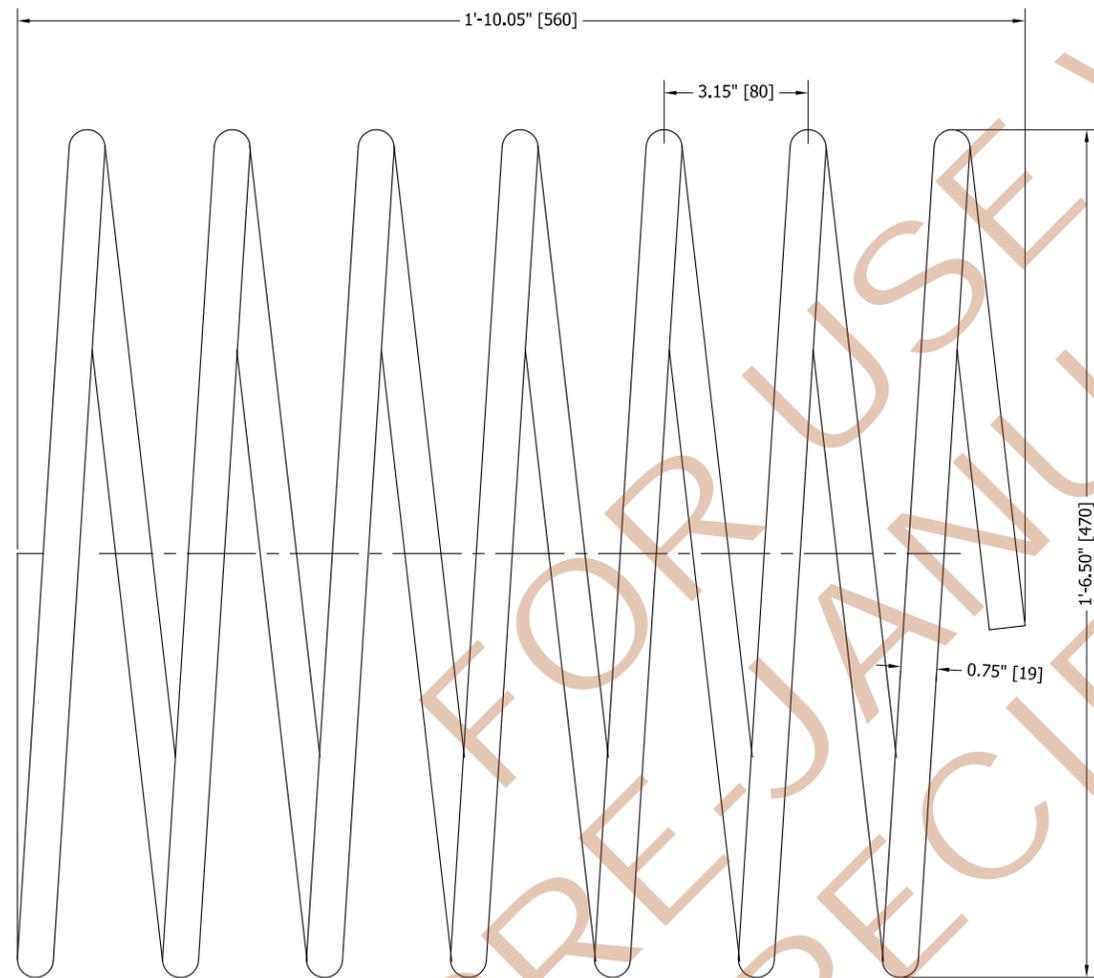
NOTES:

- MATERIAL: POLYPROPYLENE (ASTM D4101)
- STANDARD FIT FOR 115mm DUCT
- COUPLER MEETS OR EXCEEDS FDOT REQUIREMENTS OF SECTIONS 960-2.2.1.5 AND 960-2.4.4

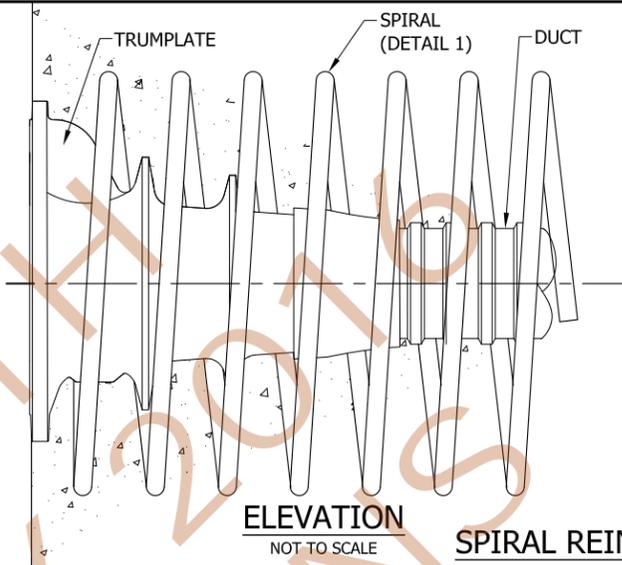
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1	7/19/2013	JF	TG/BG	AM	FIRST REVISION
0	10/1/2012	JF	TG/BG	AM	ORIGINAL



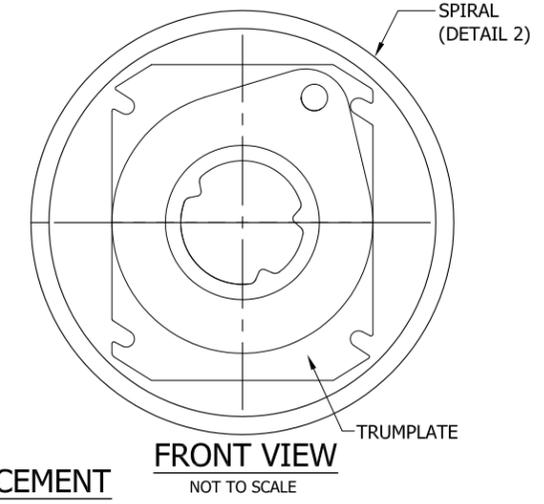
DRAWING TITLE: 27C15 115mm GTI SLIP-ON COUPLER W/ OR W/O VENT			
MATERIAL: POLYPROPYLENE (ASTM D4101)	PROJECT: FDOT	DRAWING SIZE: 11x17	SCALE: 1:2
DIMENSIONS: INCH[mm] mm FOR REFERENCE ONLY		DRAWING NUMBER: FINC-27C15-007	PART NUMBER: 220465
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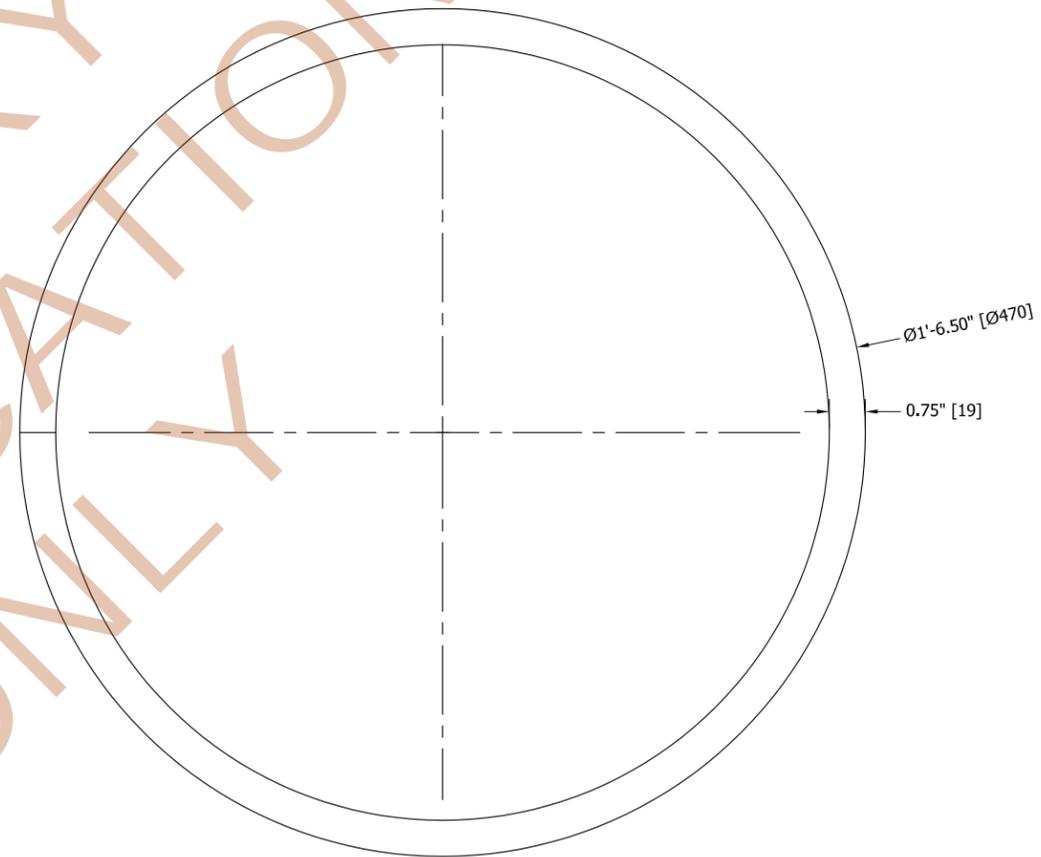
**DETAIL 1  
ELEVATION**



**ELEVATION  
NOT TO SCALE** **SPIRAL REINFORCEMENT**



**FRONT VIEW  
NOT TO SCALE**



**DETAIL 2  
FRONT VIEW**

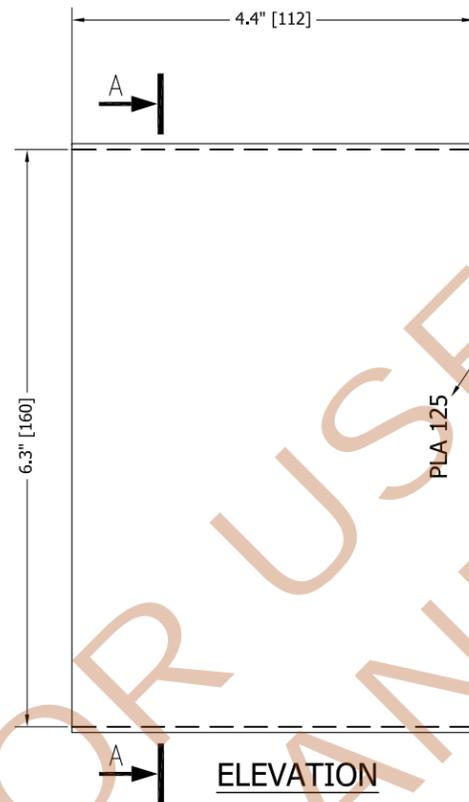
**NOTES:**

- MATERIAL: STEEL GR. 60ksi; ASTM A615
- #6 REBAR
- 7 TURNS IN TOTAL
- 3.15" PITCH
- $\phi$  18.50"

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> 27C15 SPIRAL REINFORCEMENT			
<b>MATERIAL:</b> STEEL GR. 60 ksi; 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-27C15-008	<b>PART NUMBER:</b>
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**ELEVATION**

**SECTION A-A**

**NOTES:**

- MATERIAL: POLYOLEFIN W/ ADHESIVE
- TUBULAR SLEEVE DIAMETER: 6.3" [160mm] AS SUPPLIED  
4.3" [110mm] 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



<b>DRAWING TITLE:</b> 27C15 HEAT SHRINK SLEEVE			
<b>MATERIAL:</b> POLYOLEFIN BACKING W/ ADHESIVE	<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-27C15-009	<b>PART NUMBER:</b> PLA 125	
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