

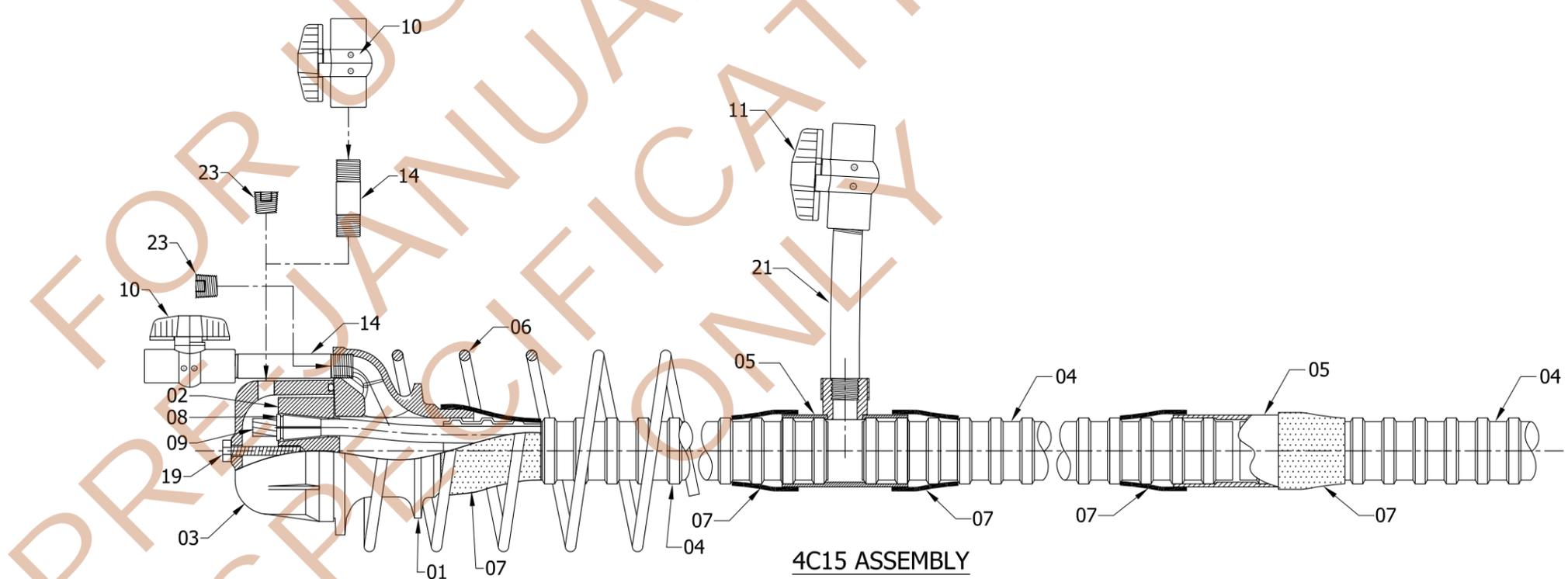
**4C15 INSTALLATION PROCEDURE:**

- 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.

4C15 ASSEMBLY				
ITEM	DESCRIPTION	MATERIAL	PART # / LABEL	DWG REF.
	4C15 INTERNAL TENDON W/COUPLER OVERALL ASSEMBLY			FINC-4C15-001
	4C15 ANCHORAGE ASSEMBLY			FINC-4C15-002
01	4C15 ANCHORAGE (TRUMPLATE)	ASTM A48, 35B GALV. ASTM A123	FREYSSINET 4C15	FINC-4C15-003
02	4C15 ANCHOR BLOCK (WEDGE PLATE)	AISI C1045/C1050	4C15	FINC-4C15-004
03	4C15 GROUT CAP	NYLON ASTM D5989	FREYSSINET 4C15	FINC-4C15-005
04	4C15 48mm GTI DUCT	POLYPROPYLENE ASTM D4101	220150	FINC-4C15-006
05	4C15 48mm GTI COUPLERS W/ OR W/O VENT	POLYPROPYLENE ASTM D4101	220155	FINC-4C15-007
06	4C15 SPIRAL REINFORCEMENT	STEEL GR. 60ksi; ASTM A615	N/A	FINC-4C15-008
07	4C15 HEAT SHRINK SLEEVE	POLYOLEFIN BACKING W/ ADHESIVE	PLA 63	FINC-4C15-009
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
14	1/2" NIPPLE	PVC SCH. 80 PRESSURE RATING ≥ 150 psi	N/A	FINC-007
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

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

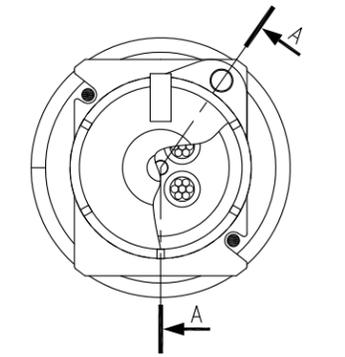


4C15 ASSEMBLY

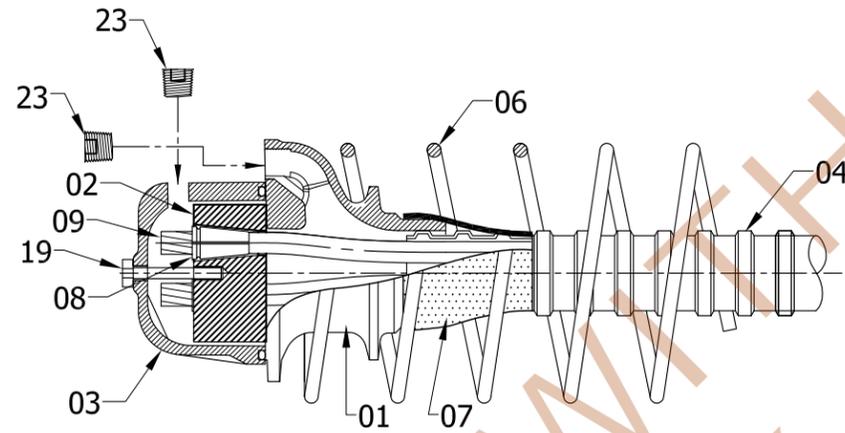
REV.	DATE	DRAWN	CHECKED	APPROVED	REVISIONS
3	7/19/13	JF	TG/BG	AM	THIRD REVISION
2	10/1/12	JF	TG/BG	AM	SECOND REVISION
1	7/26/12	TG	BG	AM	FIRST REVISION
0	2/11/11	SA	BG	AM	ORIGINAL



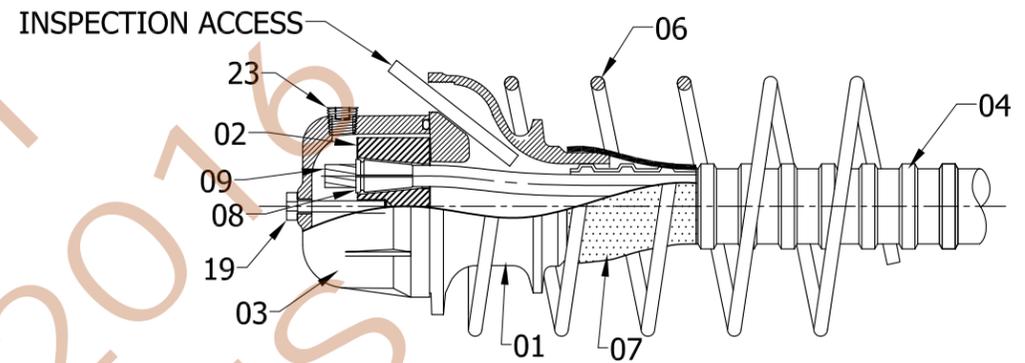
DRAWING TITLE: 4C15 INTERNAL TENDON W/COUPLER OVERALL ASSEMBLY			
MATERIAL:	PROJECT: FDOT	DRAWING SIZE: 11x17	SCALE: 1:5
DIMENSIONS: INCH[mm] mm FOR REFERENCE ONLY	DRAWING NUMBER: FINC-4C15-001	PART NUMBER:	
FREYSSINET, INC 44880 FALCON PLACE, SUITE 100 STERLING, VA 20166		COPYRIGHT & MODIFICATION RESERVED 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			



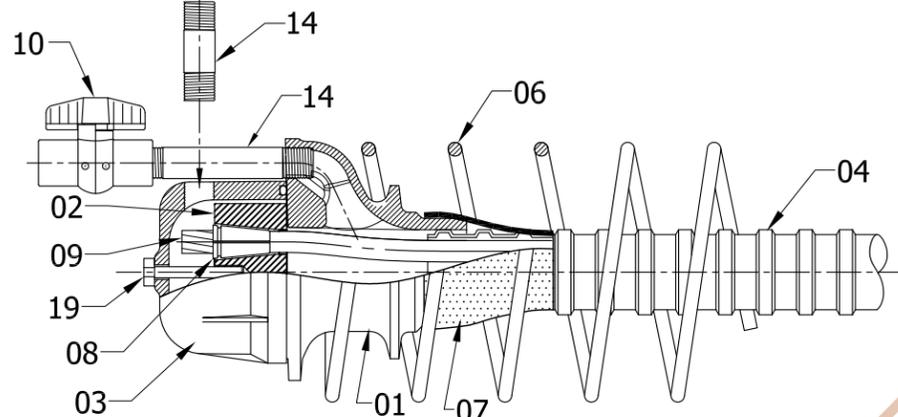
**FRONT VIEW**  
4C15 ANCHORAGE ASSEMBLY



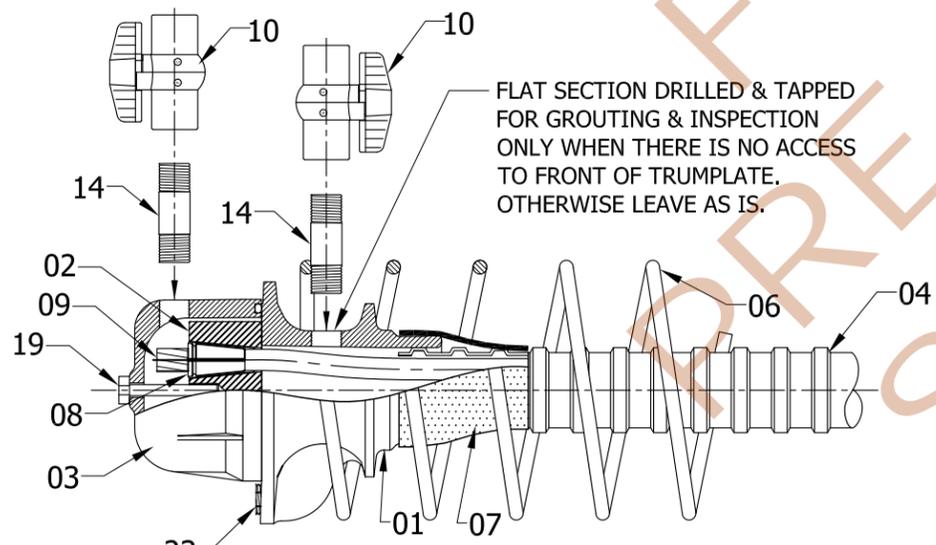
**PARTIAL SECTION A-A**  
AFTER GROUTING



**PARTIAL SECTION A-A**  
GROUT INSPECTION



**PARTIAL SECTION A-A**  
GROUT INLET / OUTLET



**PARTIAL SECTION A-A**  
GROUT AND INSPECT FROM TOP

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

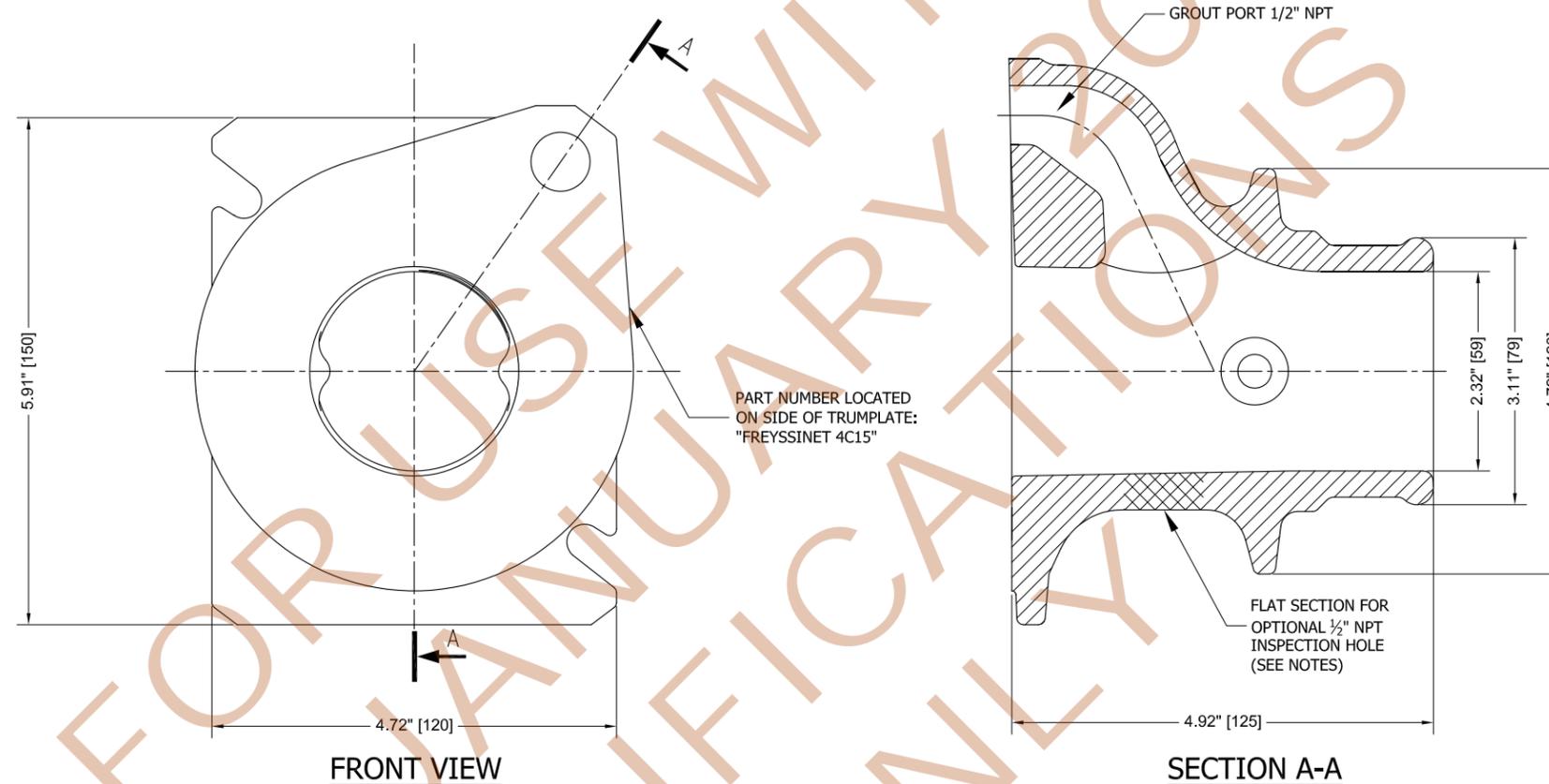
4C15 ASSEMBLY				
ITEM	DESCRIPTION	MATERIAL	PART # / LABEL	DWG REF.
	4C15 INTERNAL TENDON W/COUPLER OVERALL ASSEMBLY			FINC-4C15-001
	4C15 ANCHORAGE ASSEMBLY			FINC-4C15-002
01	4C15 ANCHORAGE (TRUMPLATE)	ASTM A48, 35B GALV. ASTM A123	FREYSSINET 4C15	FINC-4C15-003
02	4C15 ANCHOR BLOCK (WEDGE PLATE)	AISI C1045/C1050	4C15	FINC-4C15-004
03	4C15 GROUT CAP	NYLON ASTM D5989	FREYSSINET 4C15	FINC-4C15-005
04	4C15 48mm GTI DUCT	POLYPROPYLENE ASTM D4101	220150	FINC-4C15-006
06	4C15 SPIRAL REINFORCEMENT	STEEL GR. 60ksi; ASTM A615	N/A	FINC-4C15-008
07	4C15 HEAT SHRINK SLEEVES	POLYOLEFIN BACKING W/ ADHESIVE	PLA 63	FINC-4C15-009
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
14	1/2" NIPPLE	PVC SCH. 80 PRESSURE RATING ≥ 150 psi	N/A	FINC-007
19	3/8" BOLT	316 STAINLESS STEEL ASTM F593	F593	FINC-012
23	1/2" PLUG	NYLON ASTM D5989	FREYSSI 1/2"	FINC-016

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

REV.	DATE	DRAWN	CHECKED	APPROVED	REVISIONS
3	7/19/13	JF	TG/BG	AM	THIRD REVISION
2	10/1/12	JF	TG/BG	AM	SECOND REVISION
1	7/26/12	TG	BG	AM	FIRST REVISION
0	2/11/11	SA	BG	AM	ORIGINAL



DRAWING TITLE: 4C15 ANCHORAGE ASSEMBLY			
MATERIAL:	PROJECT: FDOT	DRAWING SIZE: 11x17	SCALE: 1:5
DIMENSIONS: INCH[mm] mm FOR REFERENCE ONLY	DRAWING NUMBER: FINC-4C15-002	PART NUMBER:	
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			



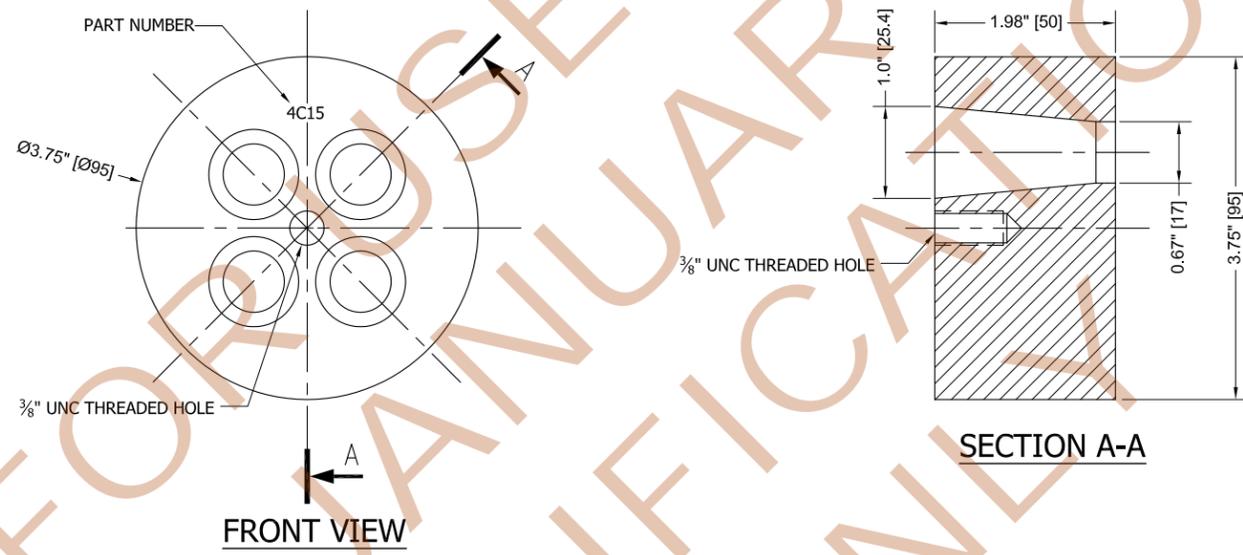
**NOTES:**

- 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
3	7/19/13	JF	TG/BG	AM	THIRD REVISION
2	10/1/12	JF	TG/BG	AM	SECOND REVISION
1	7/26/12	TG	BG	AM	FIRST REVISION
0	2/11/11	SA	BG	AM	ORIGINAL



<b>DRAWING TITLE:</b> 4C15 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-4C15-003	<b>PART NUMBER:</b> FREYSSINET 4C15	
<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			

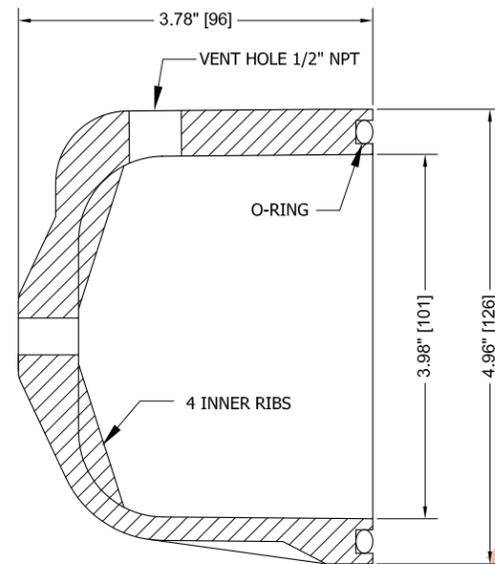


NOTE:  
 • MATERIAL: AISI C1045 / C1050

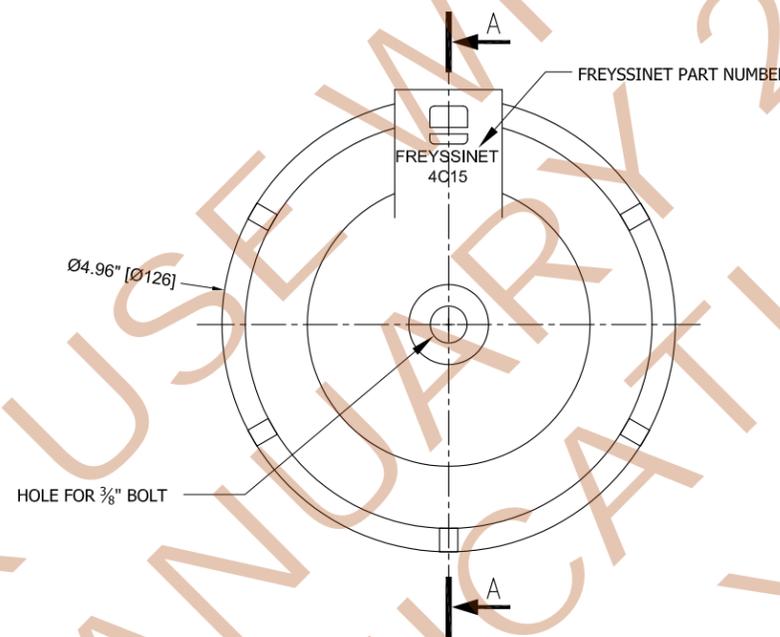
REV.	DATE	DRAWN	CHECKED	APPROVED	REVISIONS
3	7/19/13	JF	TG/BG	AM	THIRD REVISION
2	10/1/12	JF	TG/BG	AM	SECOND REVISION
1	7/26/12	TG	BG	AM	FIRST REVISION
0	2/11/11	SA	BG	AM	ORIGINAL



DRAWING TITLE: 4C15 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-4C15-004	PART NUMBER: 4C15
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			

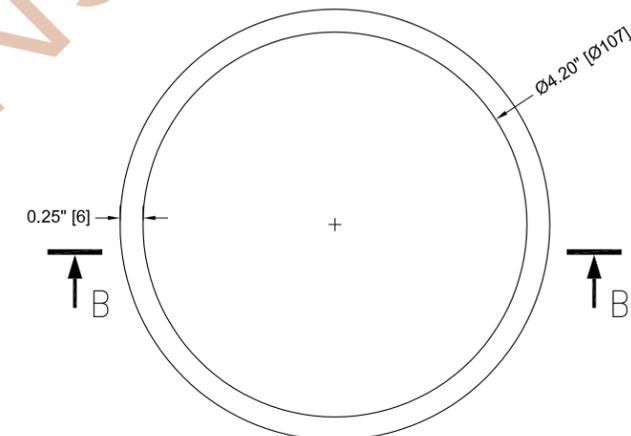


SECTION A-A



TOP VIEW

GROUT CAP



TOP VIEW



SECTION B-B

O-RING

NOTE:

- MATERIAL: NYLON ASTM D5989
- USE O-RING IN GROOVE FOR SEALING AGAINST TRUMPLATE (DWG. FINC-4C15-002)
- 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

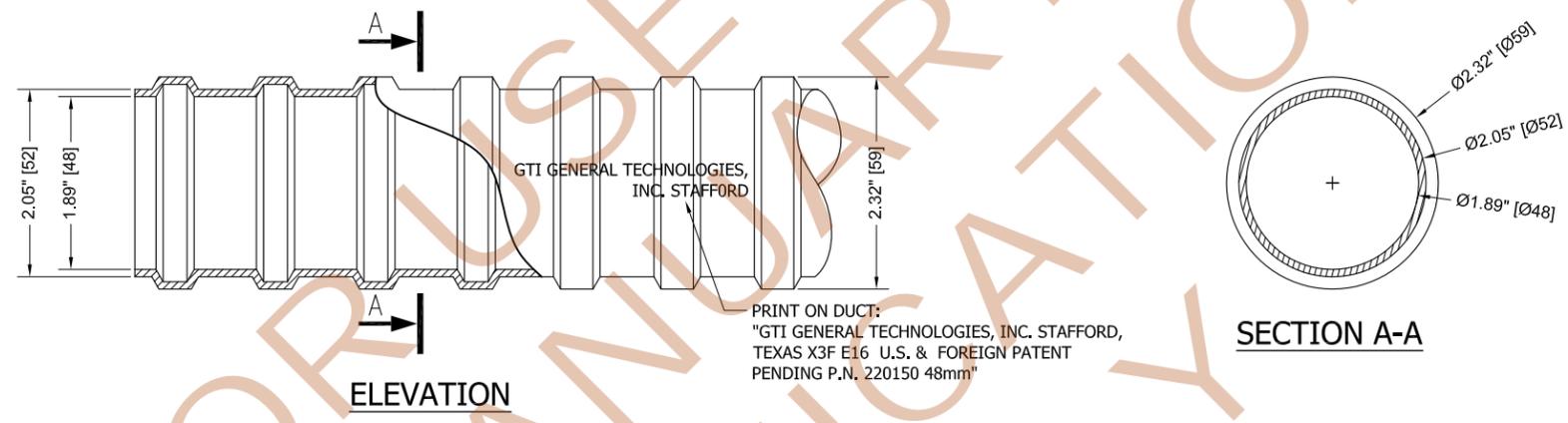
NOTE:

- 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
3	7/19/13	JF	TG/BG	AM	THIRD REVISION
2	10/1/12	JF	TG/BG	AM	SECOND REVISION
1	7/26/12	TG	BG	AM	FIRST REVISION
0	2/11/11	SA	BG	AM	ORIGINAL



DRAWING TITLE: 4C15 GROUT CAP			
MATERIAL: NYLON ASTM D5989	PROJECT: FDOT	DRAWING SIZE: 11x17	SCALE: 1:2
DIMENSIONS: INCH[mm] mm FOR REFERENCE ONLY		DRAWING NUMBER: FINC-4C15-005	PART NUMBER: FREYSSINET 4C15
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			

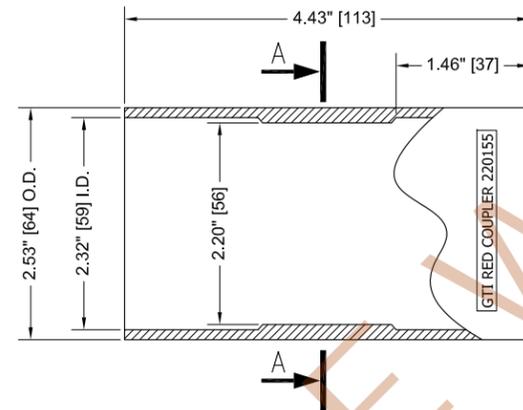


- NOTE:
- MATERIAL: POLYPROPYLENE (ASTM D4101)
  - STANDARD FIT FOR 4C15
  - DUCT IS DELIVERED IN STRAIGHT SECTIONS AND IS NOT INTENDED TO BE COILED.
- DUCT MEETS OR EXCEEDS FDOT REQUIREMENTS OF SECTION 960-2.2.1.1 AND 960-2.4.4

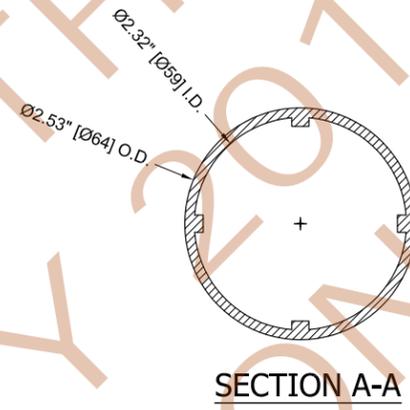
REV.	DATE	DRAWN	CHECKED	APPROVED	REVISIONS
3	7/19/13	JF	TG/BG	AM	THIRD REVISION
2	10/1/12	JF	TG/BG	AM	SECOND REVISION
1	7/26/12	TG	BG	AM	FIRST REVISION
0	2/11/11	SA	BG	AM	ORIGINAL



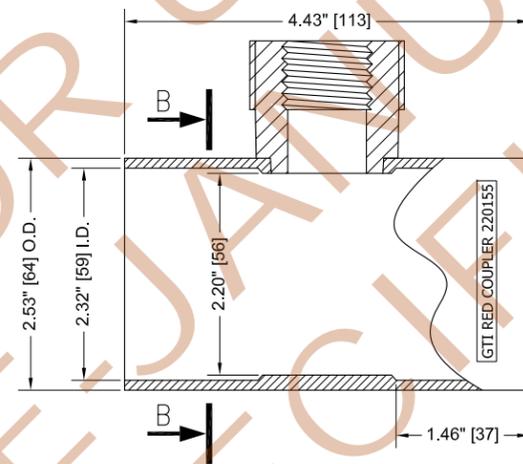
DRAWING TITLE: 4C15 48mm GTI DUCT			
MATERIAL: POLYPROPYLENE (ASTM D4101)	PROJECT: FDOT	DRAWING SIZE: 11x17	SCALE: 1:2
DIMENSIONS: INCH[mm] mm FOR REFERENCE ONLY		DRAWING NUMBER: FINC-4C15-006	PART NUMBER: 220150
FREYSSINET, INC 44880 FALCON PLACE, SUITE 100 STERLING, VA 20166		COPYRIGHT & MODIFICATION 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			



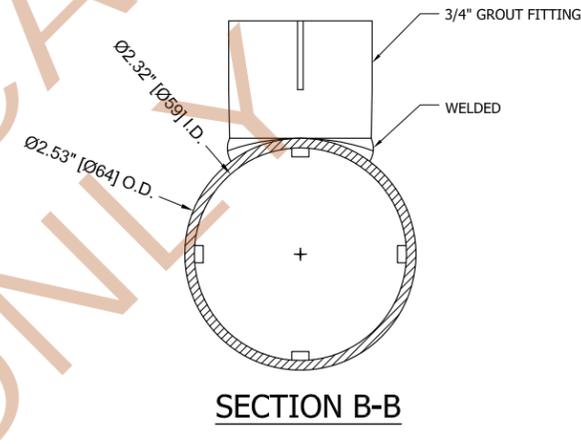
SECTION / ELEVATION COUPLER W/O VENT



SECTION A-A



SECTION / ELEVATION COUPLER W/VENT



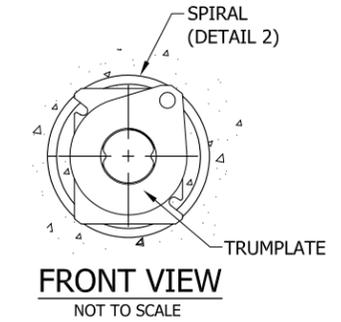
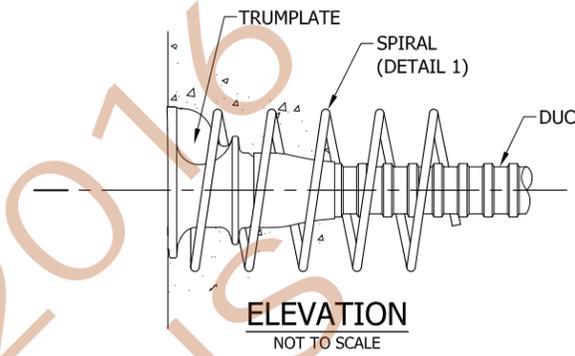
SECTION B-B

- NOTE:
- MATERIAL: POLYPROPYLENE (ASTM D4101)
  - STANDARD FIT FOR 48mm DUCT
  - COUPLER MEETS OR EXCEEDS FDOT REQUIREMENTS OF SECTION 960-2.2.1.5 AND 960-2.4.4

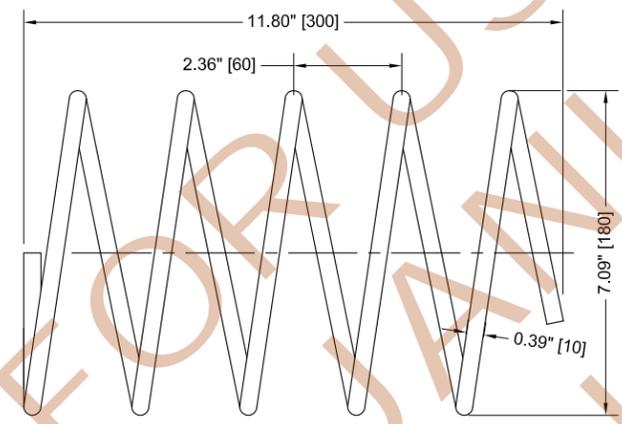
REV.	DATE	DRAWN	CHECKED	APPROVED	REVISIONS
3	7/19/13	JF	TG/BG	AM	THIRD REVISION
2	10/1/12	JF	TG/BG	AM	SECOND REVISION
1	7/26/12	TG	BG	AM	FIRST REVISION
0	2/11/11	SA	BG	AM	ORIGINAL



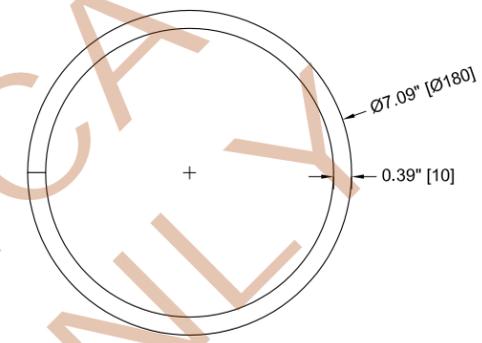
DRAWING TITLE: 4C15 48mm GTI SLIP-ON COUPLER W/ OR W/O VENT			
MATERIAL: POLYPROPYLENE (ASTM D4101)	PROJECT: FDOT	DRAWING SIZE: 11x17	SCALE: 1:2
DIMENSIONS: INCH[mm] mm FOR REFERENCE ONLY		DRAWING NUMBER: FINC-4C15-007	PART NUMBER: 220155
FREYSSINET, INC 44880 FALCON PLACE, SUITE 100 STERLING, VA 20166		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			



**SPIRAL REINFORCEMENT**



**DETAIL 1  
ELEVATION**



**DETAIL 2  
FRONT VIEW**

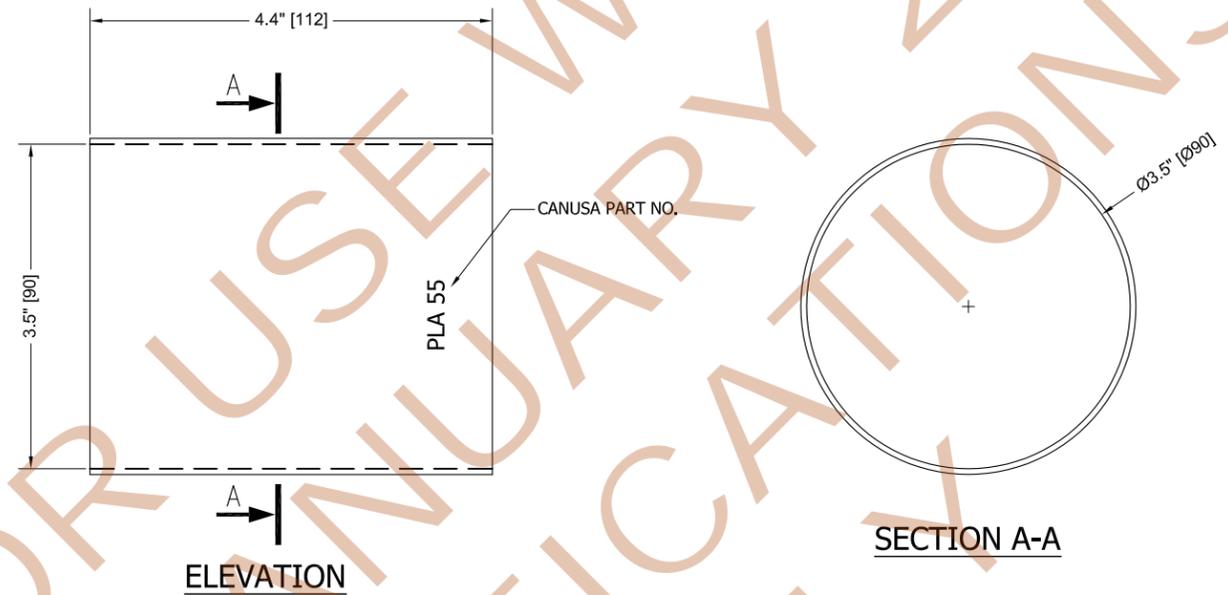
- NOTE:
- MATERIAL: STEEL GR. 60ksi; ASTM A615
  - #3 REBAR
  - 5 TURNS IN TOTAL
  - 2.36" PITCH
  - $\phi$  7.09"

REV.	DATE	DRAWN	CHECKED	APPROVED	REVISIONS
3	7/19/13	JF	TG/BG	AM	THIRD REVISION
2	10/1/12	JF	TG/BG	AM	SECOND REVISION
1	7/26/12	TG	BG	AM	FIRST REVISION
0	2/11/11	SA	BG	AM	ORIGINAL



DRAWING TITLE: 4C15 SPIRAL REINFORCEMENT			
MATERIAL: STEEL GR. 60ksi; ASTM A615	PROJECT: FDOT	DRAWING SIZE: 11x17	SCALE: 1:4
DIMENSIONS: INCH[mm] mm FOR REFERENCE ONLY		DRAWING NUMBER: FINC-4C15-008	PART NUMBER: N/A
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			

FOR USE ONLY WITH 2016 PRELIMINARY SPECIFICATIONS



- NOTE:**
- MATERIAL: POLYOLEFIN W/ ADHESIVE
  - TUBULAR SLEEVE DIAMETER: 3.5" [90mm] AS SUPPLIED  
2.3" [55mm] FULLY RECOVERED
  - HEAT SHRINK SLEEVE MEETS OR EXCEEDS FDOT REQUIREMENTS OF SECTION 960-2.2.1.8

REV.	DATE	DRAWN	CHECKED	APPROVED	REVISIONS
3	7/19/13	JF	TG/BG	AM	THIRD REVISION
2	10/1/12	JF	TG/BG	AM	SECOND REVISION
1	7/26/12	TG	BG	AM	FIRST REVISION
0	2/11/11	SA	BG	AM	ORIGINAL



<b>DRAWING TITLE:</b> 4C15 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-4C15-009	<b>PART NUMBER:</b> PLA 55	
<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			