

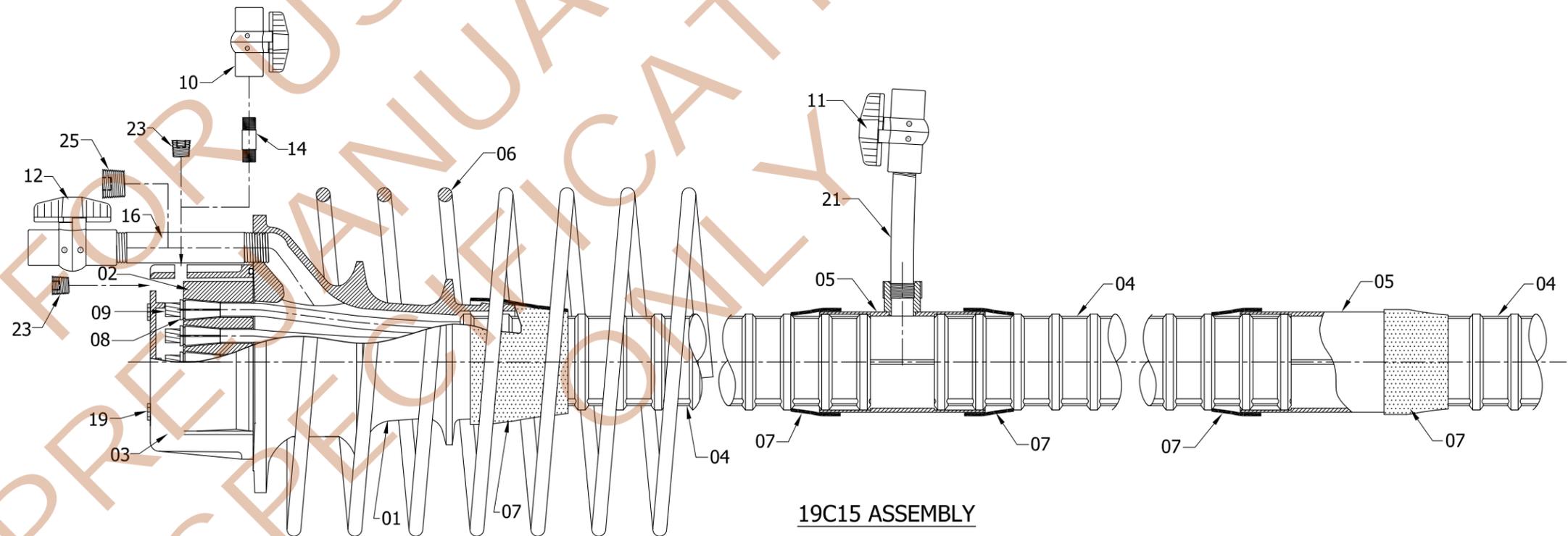
19C15 INSTALLATION PROCEDURE:

- 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.

| 19C15 ASSEMBLY | | | | |
|----------------|--|--|------------------|----------------|
| ITEM | DESCRIPTION | MATERIAL | PART # / LABEL | DWG REF. |
| | 19C15 INTERNAL TENDON W/COUPLER OVERALL ASSEMBLY | | | FINC-19C15-001 |
| | 19C15 ANCHORAGE ASSEMBLY | | | FINC-19C15-002 |
| 01 | 19C15 ANCHORAGE (TRUMPLATE) | ASTM A536 GR. 80-55-06 GALV. ASTM A123 | FREYSSINET 19C15 | FINC-19C15-003 |
| 02 | 19C15 ANCHOR BLOCK (WEDGE PLATE) | AISI C1045/C1050 | 19C15 | FINC-19C15-004 |
| 03 | 19C15 GROUT CAP | NYLON ASTM D5989 | FREYSSINET 19C15 | FINC-19C15-005 |
| 04 | 19C15 100mm GTI DUCT | POLYPROPYLENE ASTM D4101 | 220410 | FINC-19C15-006 |
| 05 | 19C15 100mm GTI SLIP-ON COUPLER W/ AND W/O VENT | POLYPROPYLENE ASTM D4101 | 220415 | FINC-19C15-007 |
| 06 | 19C15 SPIRAL REINFORCEMENT | STEEL GR. 60ksi; ASTM A615 | N/A | FINC-19C15-008 |
| 07 | 19C15 HEAT SHRINK SLEEVE | POLYOLEFIN BACKING W/ ADHESIVE | PLA 115 | FINC-19C15-009 |
| 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

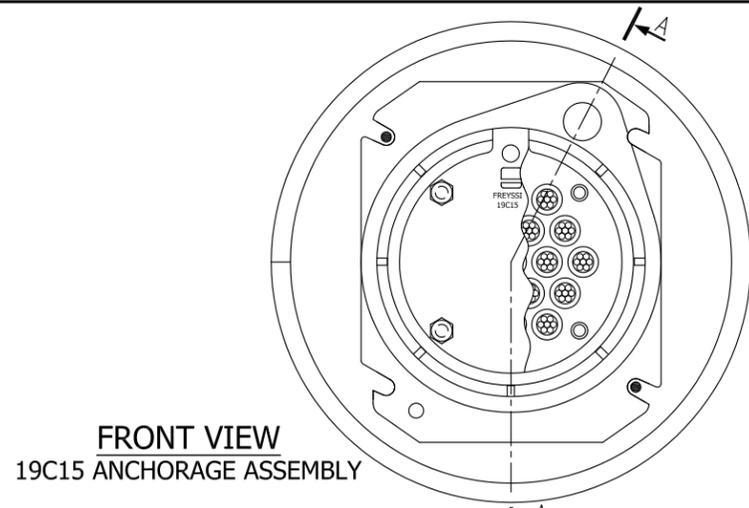


19C15 ASSEMBLY

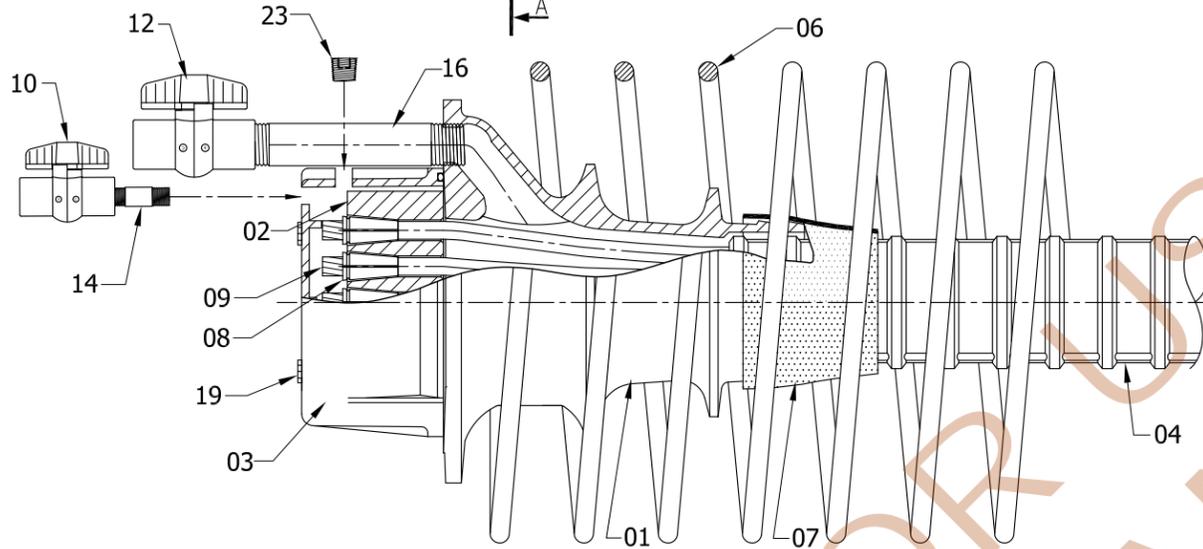
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| 1 | 10/1/2012 | JF | TG/BG | AM | FIRST REVISION |
| 0 | 11/21/11 | TG | BG | DM | ORIGINAL |



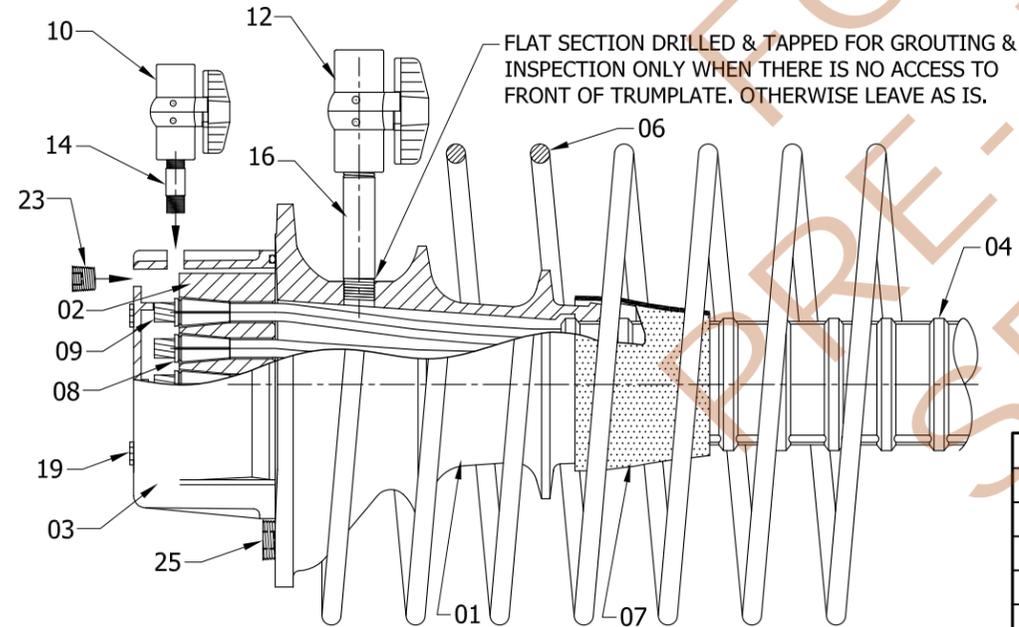
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| DIMENSIONS: INCH[mm] mm FOR REFERENCE ONLY | | DRAWING NUMBER: FINC-19C15-001 | COPYRIGHT & MODIFICATION RESERVED |
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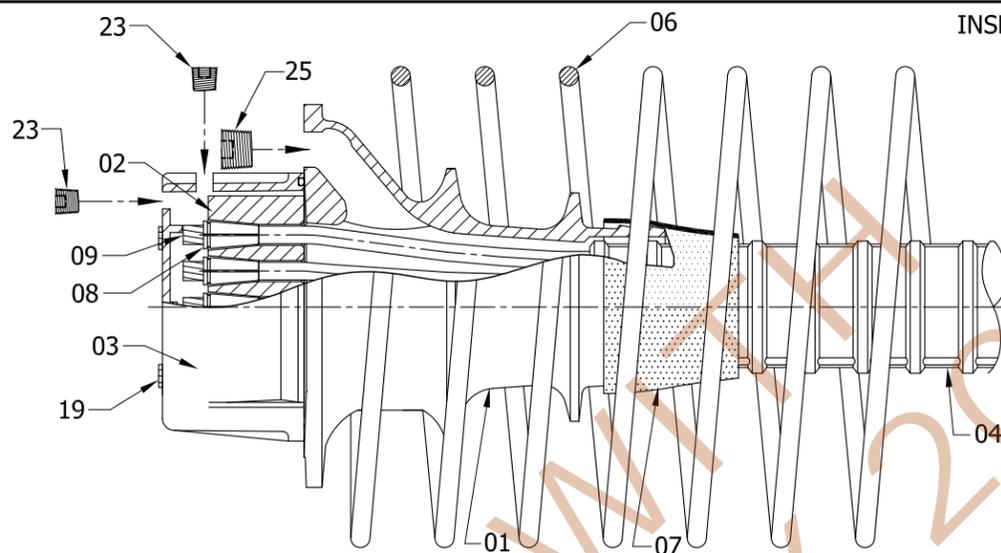
FRONT VIEW
19C15 ANCHORAGE ASSEMBLY



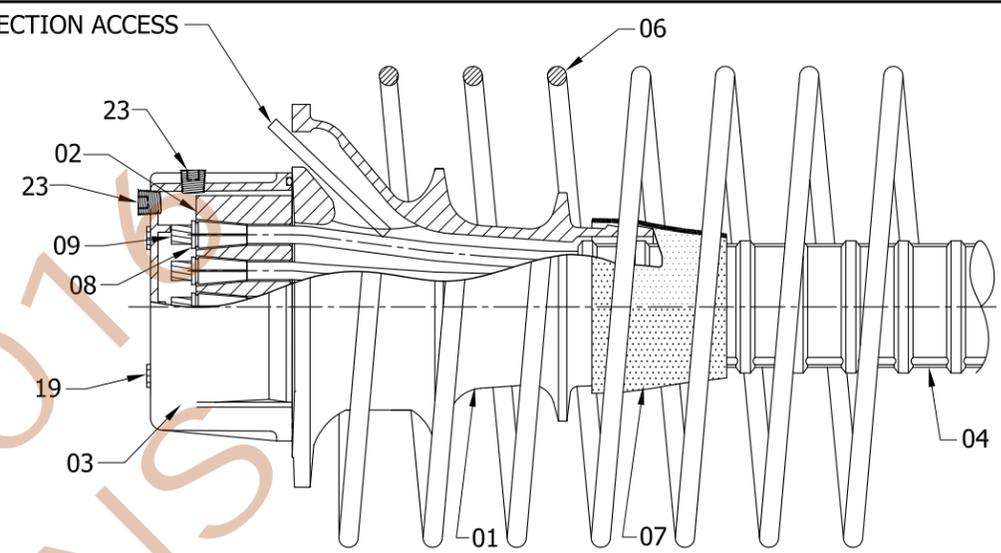
PARTIAL SECTION A-A
GROUT INLET / OUTLET



PARTIAL SECTION A-A
GROUT & INSPECT FROM TOP



PARTIAL SECTION A-A
AFTER GROUTING



PARTIAL SECTION A-A
GROUT INSPECTION

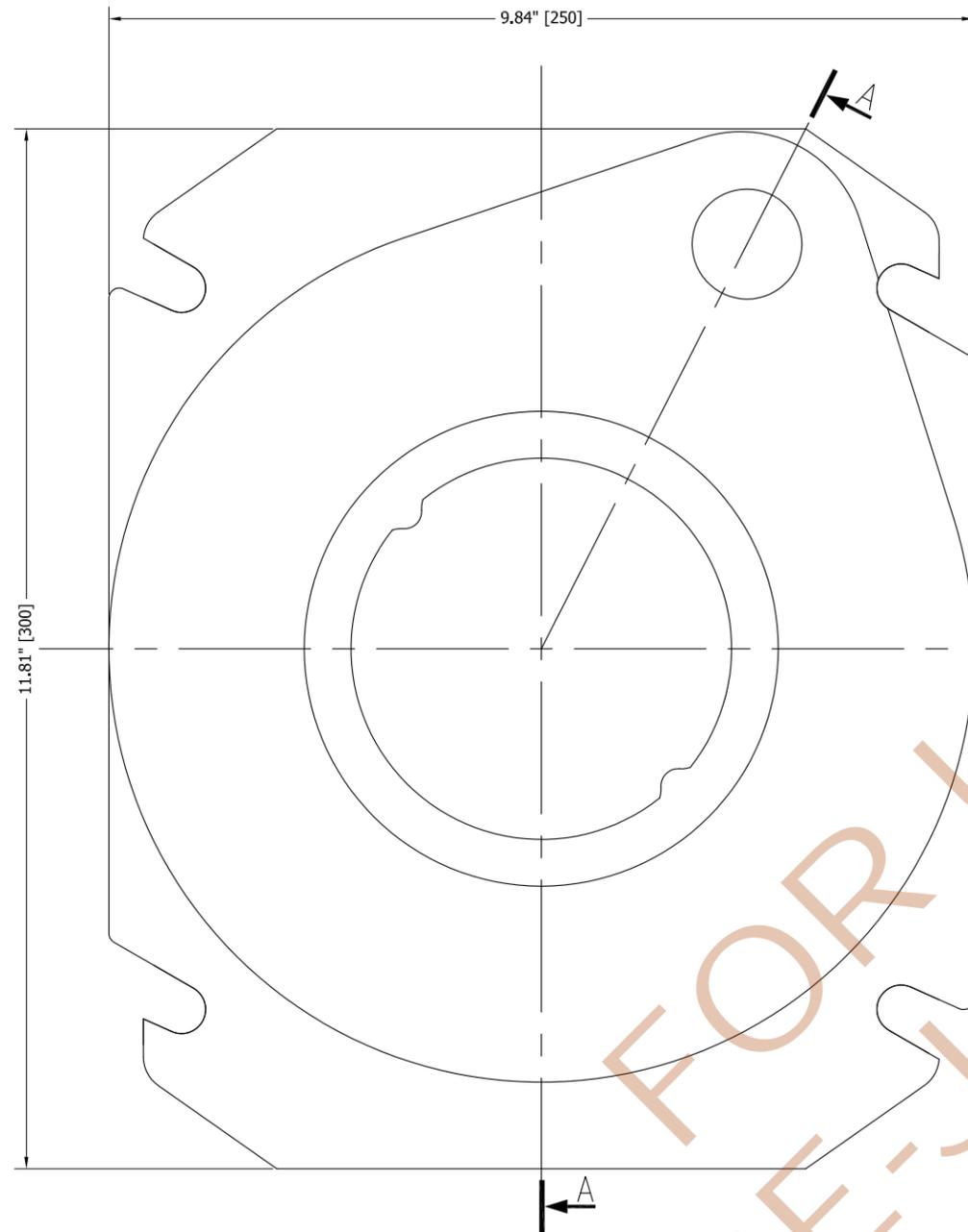
| 19C15 ASSEMBLY | | | | |
|----------------|--|---------------------------------------|------------------|----------------|
| ITEM | DESCRIPTION | MATERIAL | PART # / LABEL | DWG REF. |
| | 19C15 INTERNAL TENDON W/COUPLER OVERALL ASSEMBLY | | | FINC-19C15-001 |
| | 19C15 ANCHORAGE ASSEMBLY | | | FINC-19C15-002 |
| 01 | 19C15 ANCHORAGE (TRUMPLATE) | ASTM A536 GR. 80-55-06 GALV. ASTMA123 | FREYSSINET 19C15 | FINC-19C15-003 |
| 02 | 19C15 ANCHOR BLOCK (WEDGE PLATE) | AISI C1045/C1050 | 19C15 | FINC-19C15-004 |
| 03 | 19C15 GROUT CAP | NYLON ASTM D5989 | FREYSSINET 19C15 | FINC-19C15-005 |
| 04 | 19C15 100mm GTI DUCT | POLYPROPYLENE ASTM D4101 | 220410 | FINC-19C15-006 |
| 06 | 19C15 SPIRAL REINFORCEMENT | STEEL GR. 60ksi; ASTM A615 | N/A | FINC-19C15-008 |
| 07 | 19C15 HEAT SHRINK SLEEVE | POLYOLEFIN BACKING W/ ADHESIVE | PLA 115 | FINC-19C15-009 |
| 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

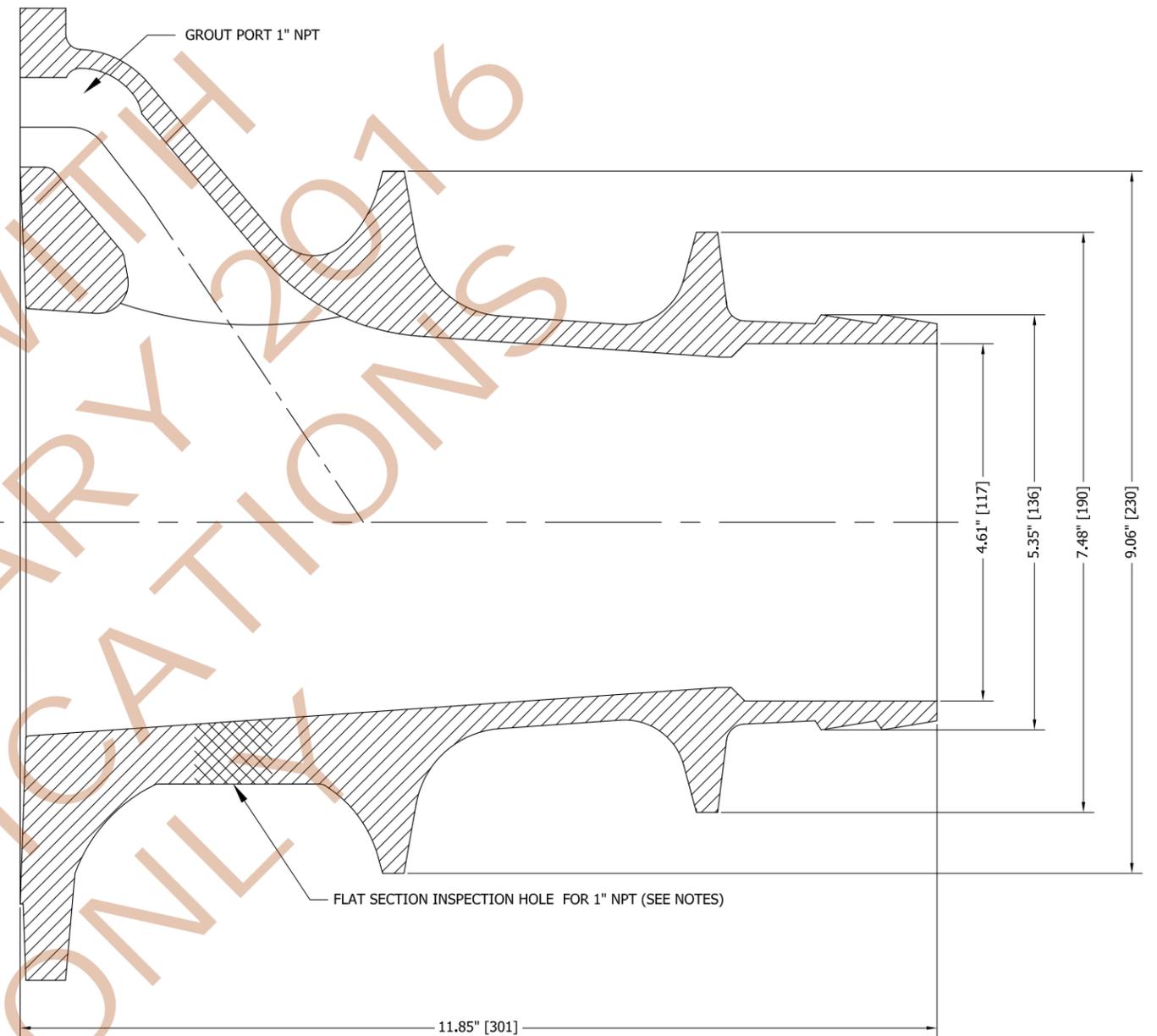
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|------|-----------|-------|---------|----------|-----------------|
| 2 | 7/19/2013 | JF | TG/BG | AM | SECOND REVISION |
| 1 | 10/1/2012 | JF | TG/BG | AM | FIRST REVISION |
| 0 | 11/21/11 | TG | BG | DM | ORIGINAL |



| | | | |
|--|------------------|--|---------------|
| DRAWING TITLE: 19C15 ANCHORAGE ASSEMBLY | | | |
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FRONT VIEW



SECTION A-A

PART NUMBER LOCATED ON SIDE OF TRUMPLATE: "FREYSSINET 19C15"

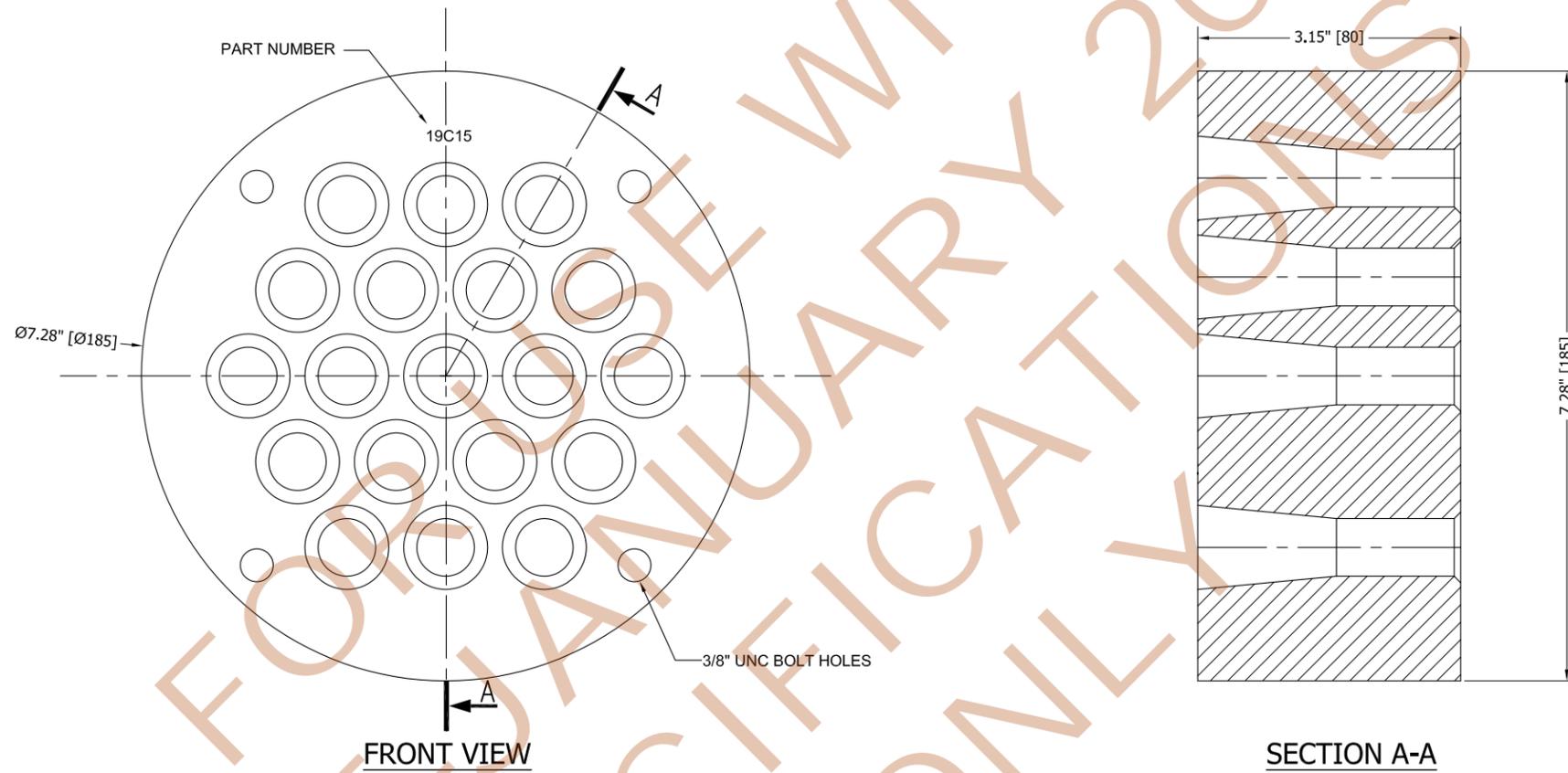
NOTES:

- MATERIAL: ASTM A536, GR. 80-55-06
- 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 |
|------|-----------|-------|---------|----------|-----------------|
| 2 | 7/19/2013 | JF | TG/BG | AM | SECOND REVISION |
| 1 | 10/1/2012 | JF | TG/BG | AM | FIRST REVISION |
| 0 | 11/21/11 | TG | BG | DM | ORIGINAL |



| | | | |
|---|--|---|----------------------|
| DRAWING TITLE: 19C15 ANCHORAGE (TRUMPLATE) | | | |
| MATERIAL: ASTM A536, GR 80-55-06 GALV. ASTM A123 | PROJECT: FDOT | DRAWING SIZE: 11x17 | SCALE: 1:2 |
| DIMENSIONS: INCH[mm] mm FOR REFERENCE ONLY | DRAWING NUMBER: FINC-19C15-003 | PART NUMBER: FREYSSINET 19C15 | |
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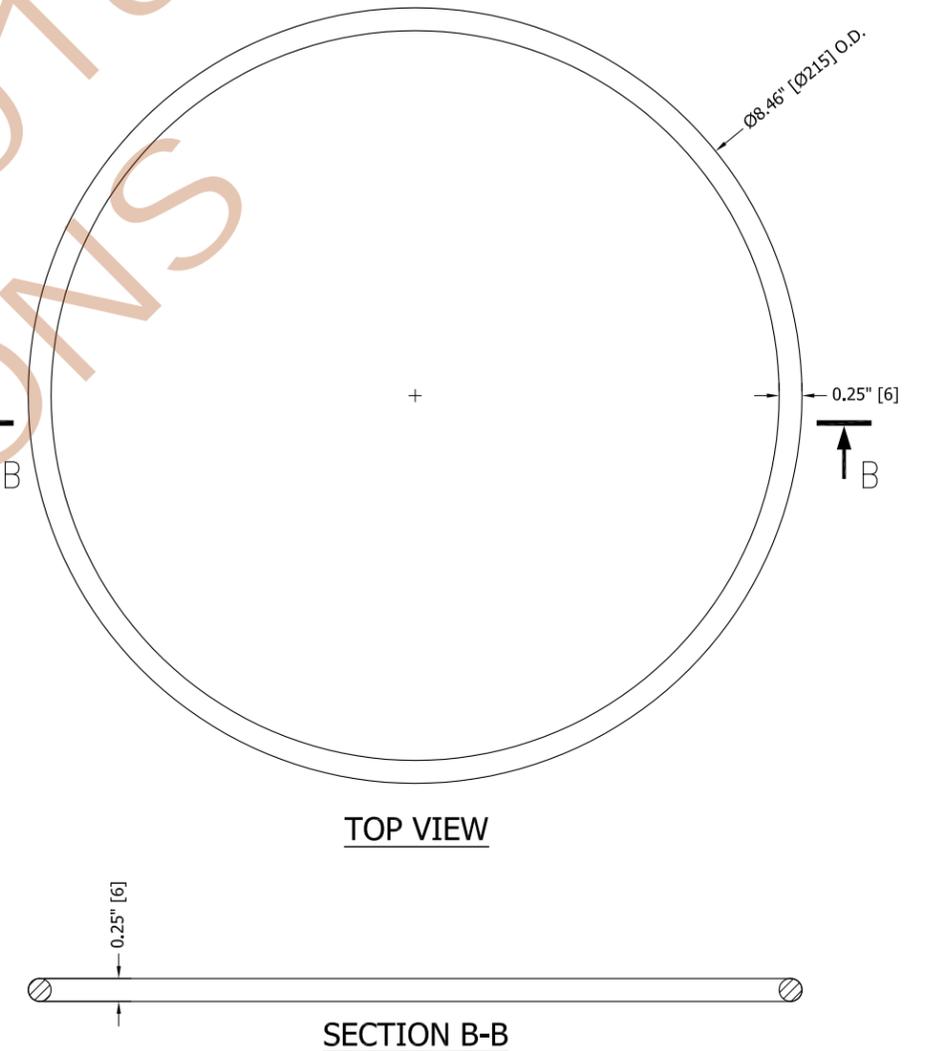
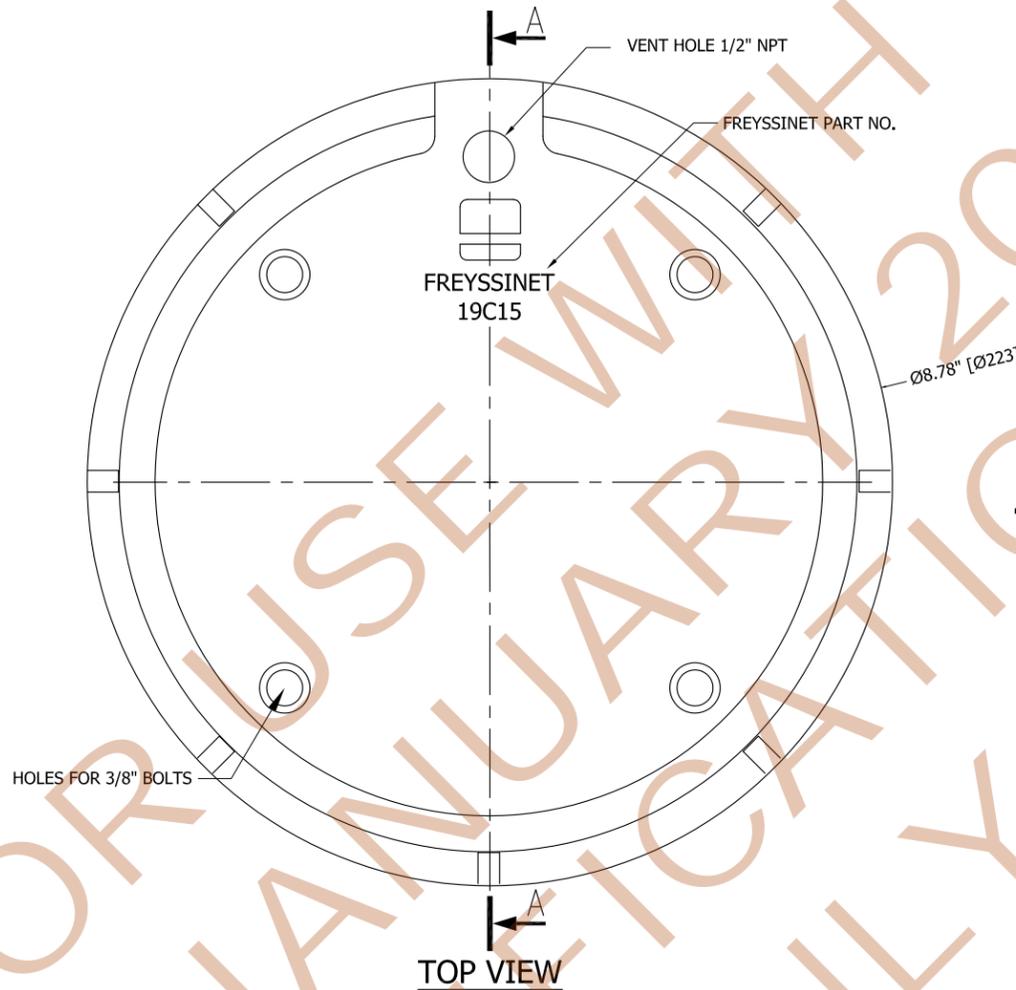
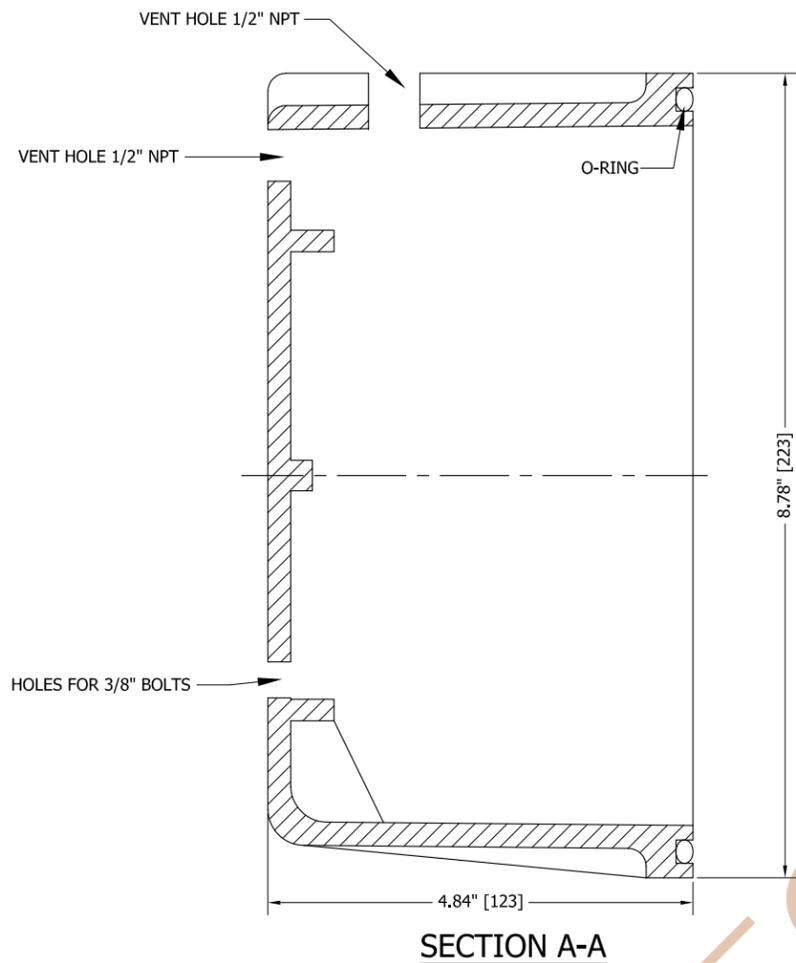


NOTE:
 • MATERIAL: AISI C1045 / C1050

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|------|-----------|-------|---------|----------|-----------------|
| 2 | 7/19/2013 | JF | TG/BG | AM | SECOND REVISION |
| 1 | 10/1/2012 | JF | TG/BG | AM | FIRST REVISION |
| 0 | 11/21/11 | TG | BG | DM | ORIGINAL |



| | | | |
|---|------------------|---|-----------------------|
| DRAWING TITLE: 19C15 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-19C15-004 | PART NUMBER: 19C15 |
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GROUT CAP

TOP VIEW

SECTION B-B

NOTES:

- MATERIAL: NYLON ASTM D5989
- USE O-RING IN GROOVE FOR SEALING AGAINST TRUMPLATE (DWG. FINC-19C15-002)
- 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

O-RING

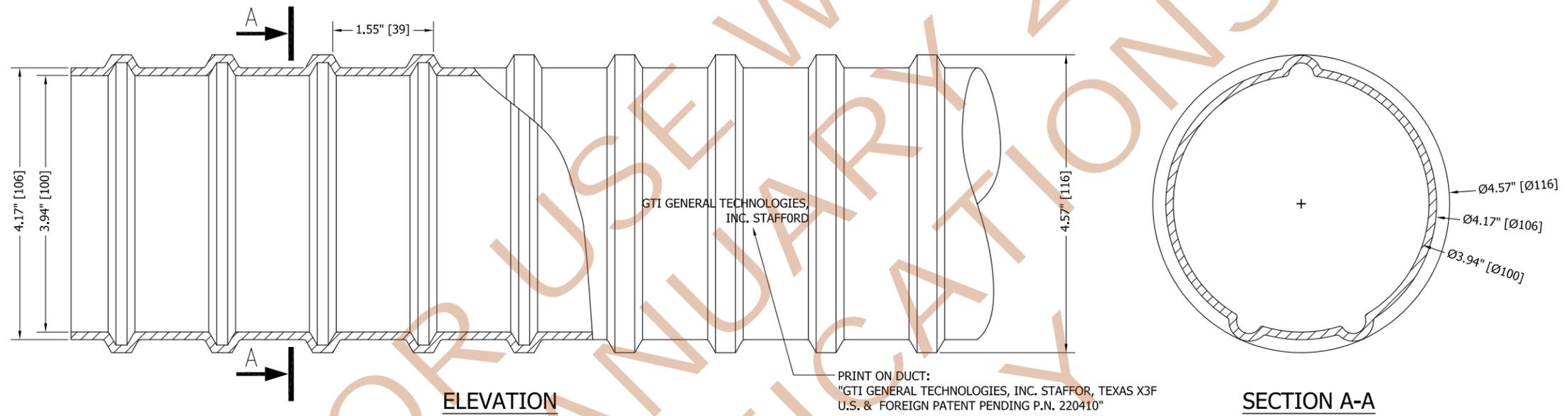
NOTES:

- 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 |
|------|-----------|-------|---------|----------|-----------------|
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| 1 | 10/1/2012 | JF | TG/BG | AM | FIRST REVISION |
| 0 | 11/21/11 | TG | BG | DM | ORIGINAL |



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|--|------------------|--|----------------------------------|
| DRAWING TITLE: 19C15 GROUT CAP | | | |
| MATERIAL: NYLON ASTM D5989 | PROJECT: FDOT | DRAWING SIZE: 11x17 | SCALE: 1:2 |
| DIMENSIONS: INCH[mm] mm FOR REFERENCE ONLY | | DRAWING NUMBER: FINC-19C15-005 | PART NUMBER: FREYSSINET 19C15 |
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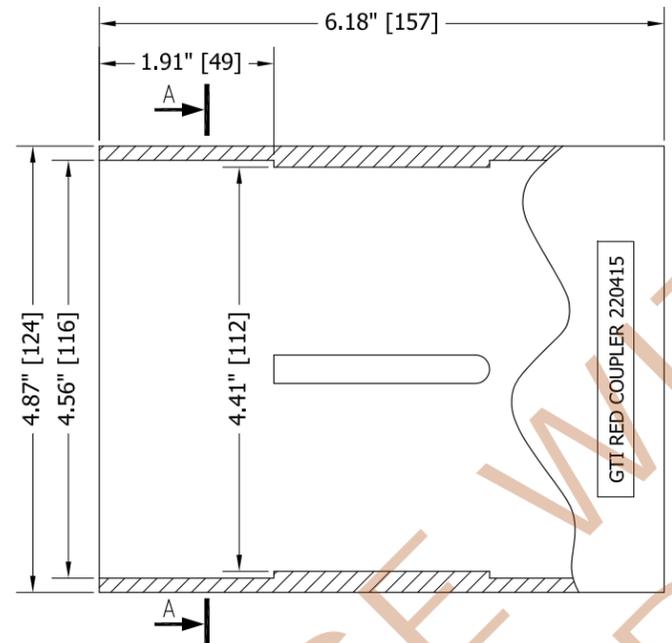


- NOTE:
- MATERIAL: POLYPROPYLENE (ASTM D4101)
 - STANDARD FIT FOR 19C15
 - DUCT IS DELIVERED IN STRAIGHT SECTIONS AND IS NOT INTENDED TO BE COILED.
 - DUCT MEETS OR EXCEEDS FDOT REQUIREMENTS OF SECTIONS 960-2.2.1.1 AND 960-2.4.4

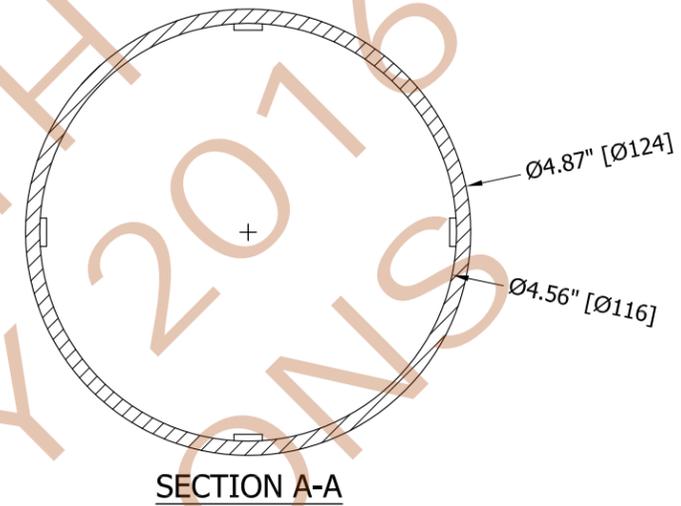
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| 0 | 11/21/11 | TG | BG | DM | ORIGINAL |



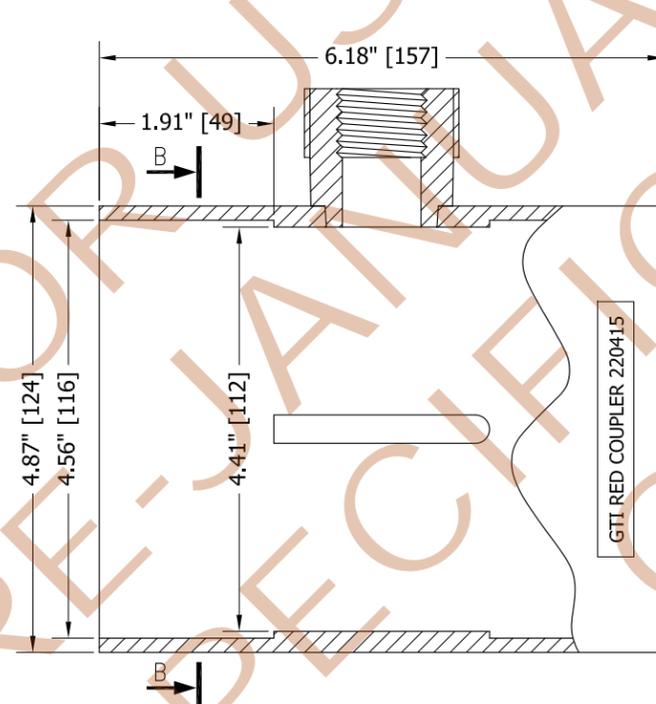
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|---|------------------|---|------------------------|
| DRAWING TITLE: 19C15 100mm GTI DUCT | | | |
| MATERIAL: POLYPROPYLENE (ASTM D4101) | PROJECT: FDOT | DRAWING SIZE: 11x17 | SCALE: 1:2 |
| DIMENSIONS: INCH[mm] mm FOR REFERENCE ONLY | | DRAWING NUMBER: FINC-19C15-006 | PART NUMBER: 220410 |
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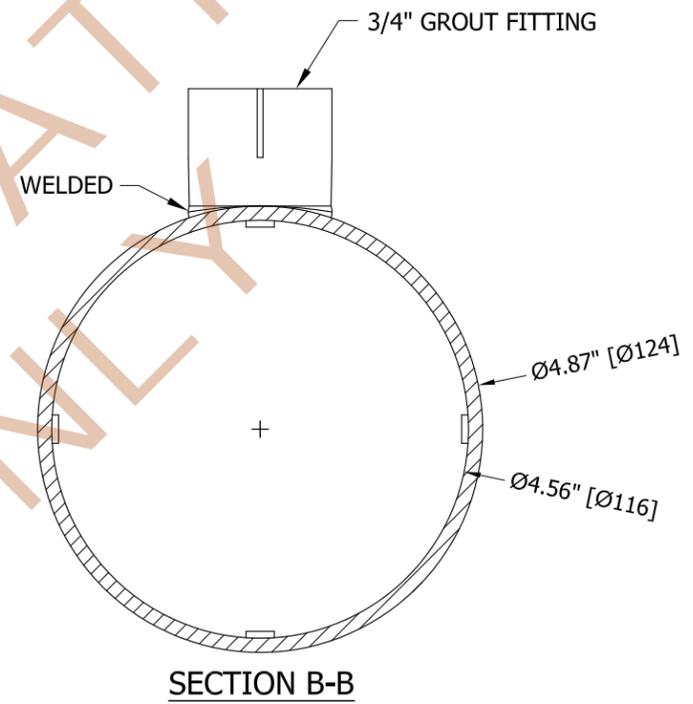
SECTION / ELEVATION COUPLER W/O VENT



SECTION A-A



SECTION / ELEVATION COUPLER W/ VENT



SECTION B-B

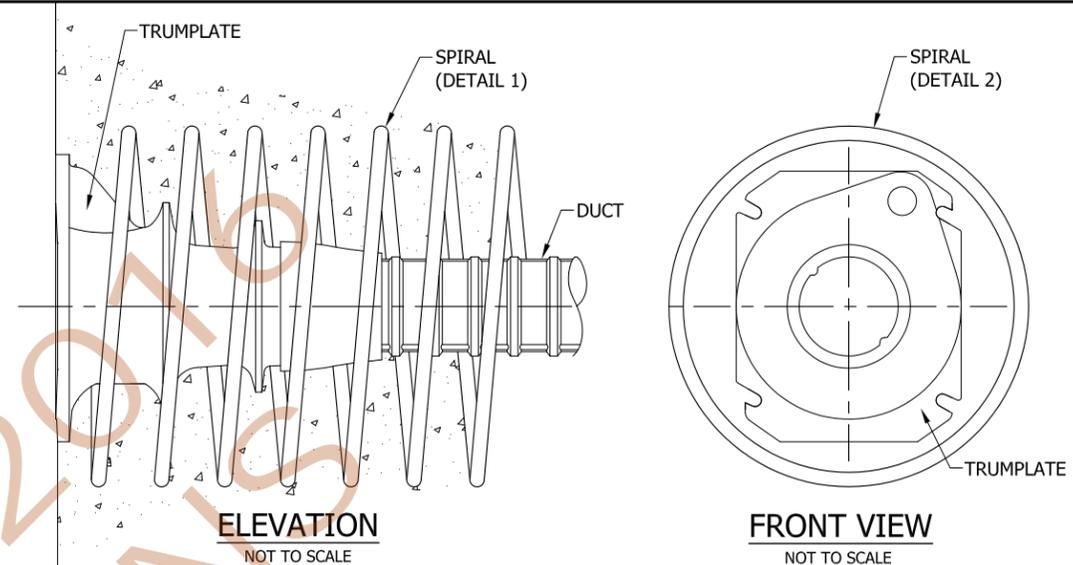
NOTES:

- MATERIAL: POLYPROPYLENE (ASTM D4101)
- STANDARD FIT FOR 100mm DUCT
- COUPLER MEETS OR EXCEEDS FDOT REQUIREMENTS OF SECTIONS 960-2.2.1.5 AND 960-2.4.4

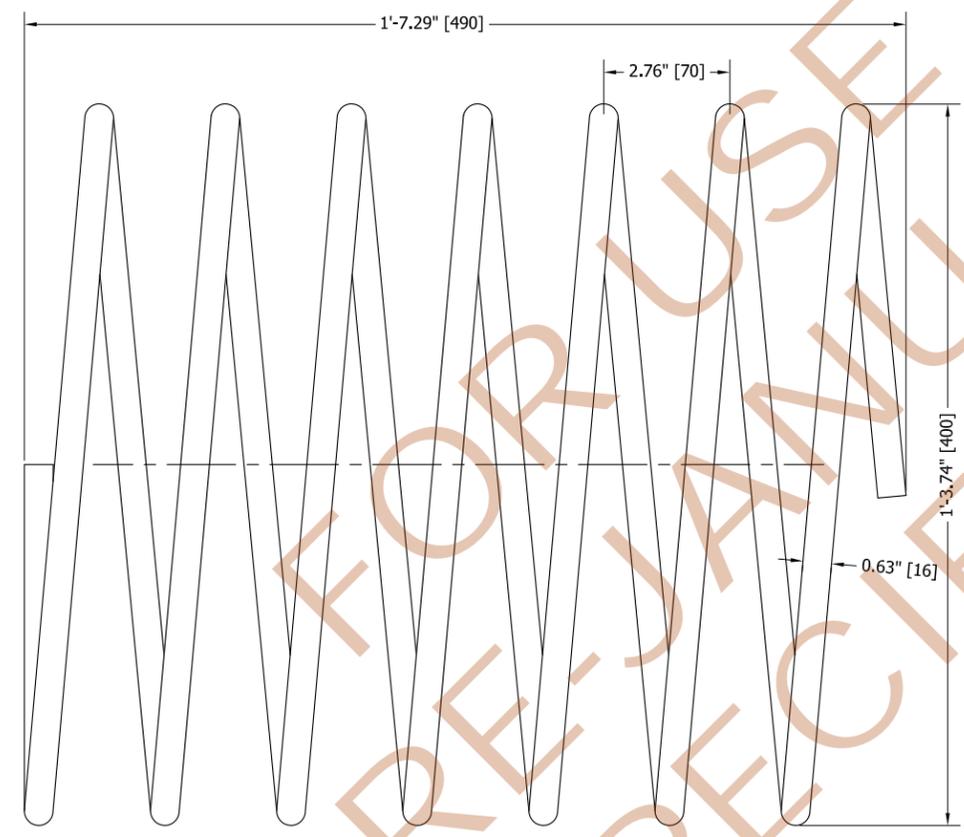
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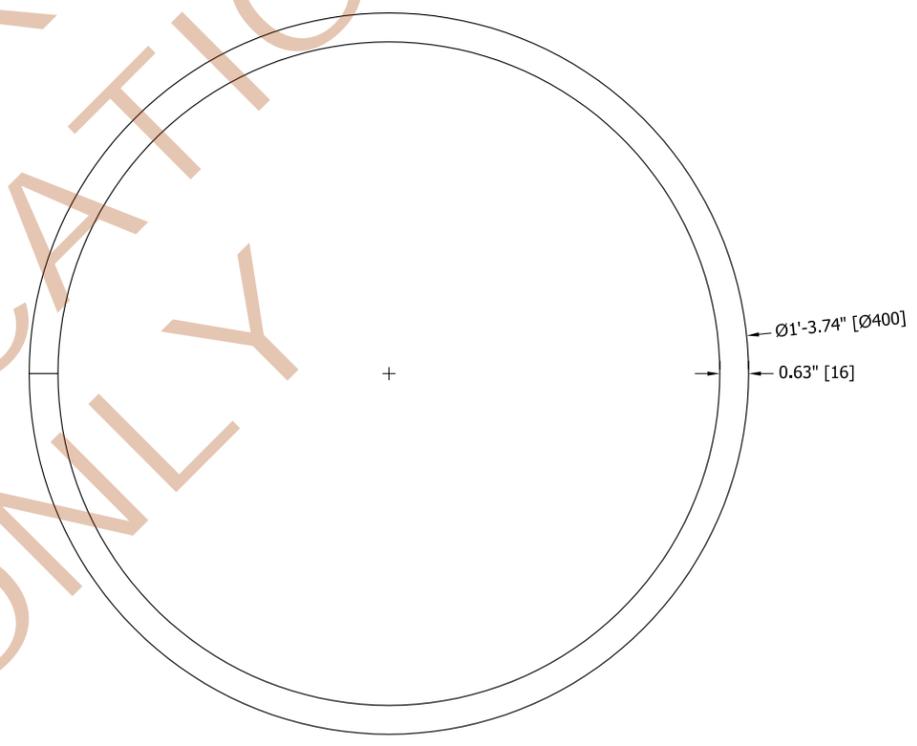
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| DRAWING TITLE: 19C15 100mm GTI SLIP-ON COUPLER W/ OR W/O VENT | | | |
| MATERIAL: POLYPROPYLENE (ASTM D4101) | PROJECT: FDOT | DRAWING SIZE: 11x17 | SCALE: 1:2 |
| DIMENSIONS: INCH[mm] mm FOR REFERENCE ONLY | | DRAWING NUMBER: FINC-19C15-007 | PART NUMBER: 220415 |
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SPIRAL REINFORCEMENT



**DETAIL 1
ELEVATION**



**DETAIL 2
FRONT VIEW**

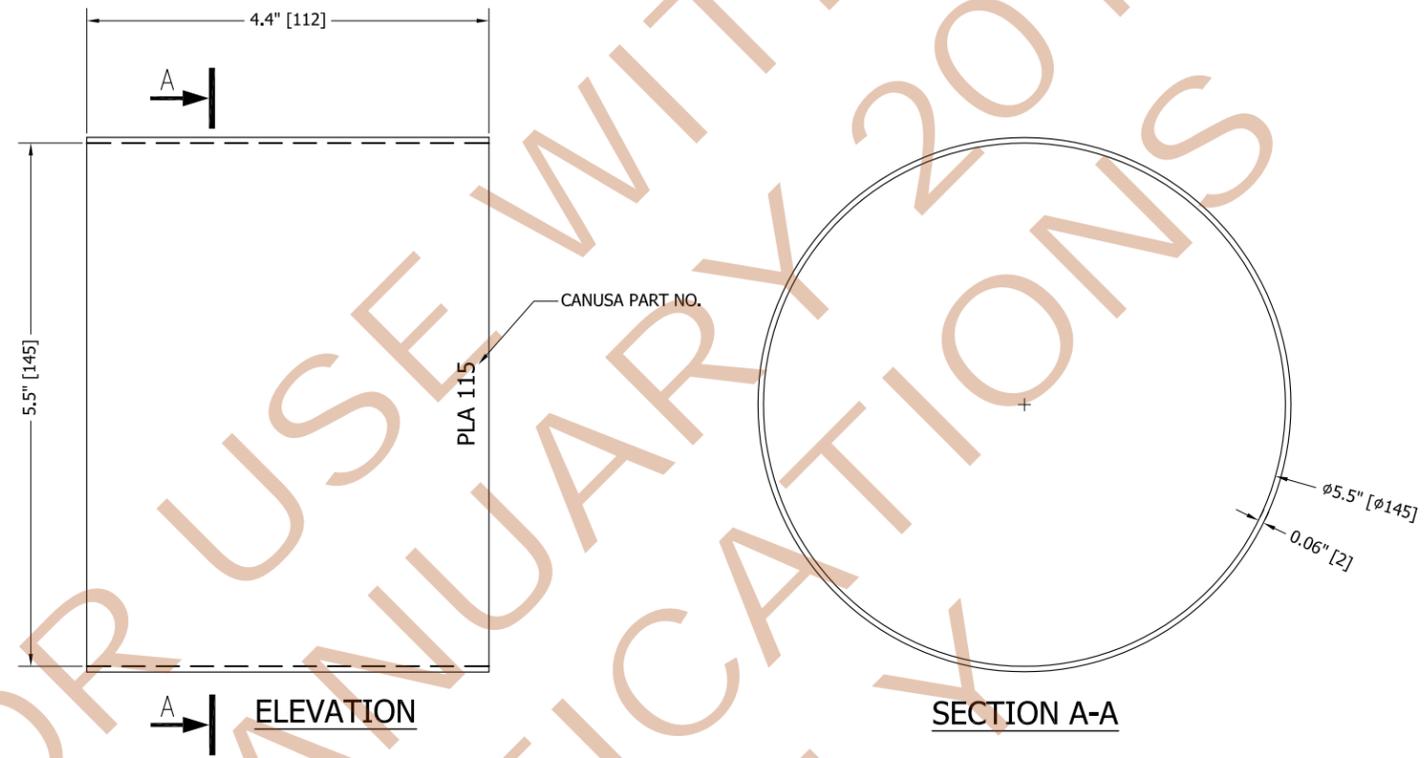
NOTES:

- MATERIAL: STEEL GR. 60ksi; ASTM A615
- #5 REBAR
- 7 TURNS IN TOTAL
- 2.76" PITCH
- ϕ 15.74"

| REV. | DATE | DRAWN | CHECKED | APPROVED | REVISIONS |
|------|-----------|-------|---------|----------|-----------------|
| 2 | 7/19/2013 | JF | TG/BG | AM | SECOND REVISION |
| 1 | 10/1/2012 | JF | TG/BG | AM | FIRST REVISION |
| 0 | 11/21/11 | TG | BG | DM | ORIGINAL |



| | | | |
|---|-------------------------|---|----------------------|
| DRAWING TITLE: 19C15 SPIRAL REINFORCEMENT | | | |
| MATERIAL: STEEL GR. 60 ksi; ASTM A615 | PROJECT: FDOT | DRAWING SIZE: 11x17 | SCALE: 1:4 |
| DIMENSIONS: INCH[mm] mm FOR REFERENCE ONLY | | DRAWING NUMBER: FINC-19C15-008 | PART NUMBER: |
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NOTE:

- MATERIAL: POLYOLEFIN W/ ADHESIVE
- TUBULAR SLEEVE DIAMETER: 5.5" [145mm] AS SUPPLIED
3.8" [98mm] FULLY RECOVERED
- HEAT SHRINK SLEEVE MEETS OR EXCEEDS FDOT REQUIREMENTS OF SECTION 960-2.2.1.8

| REV. | DATE | DRAWN | CHECKED | APPROVED | REVISIONS |
|------|-----------|-------|---------|----------|-----------------|
| 2 | 7/19/2013 | JF | TG/BG | AM | SECOND REVISION |
| 1 | 10/1/2012 | JF | TG/BG | AM | FIRST REVISION |
| 0 | 11/21/11 | TG | BG | DM | ORIGINAL |



| | | | |
|---|--|---|----------------------|
| DRAWING TITLE: 19C15 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-19C15-009 | PART NUMBER: PLA 115 | |
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