### Material List

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>DESCRIPTION</th>
<th>MATERIAL SPECIFICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>B36E0110</td>
<td>1-3/8&quot; DRIVING THREADBAR</td>
<td>ASTM A325 TYPE 5 STEEL</td>
</tr>
<tr>
<td>B36E24010</td>
<td>Ø 1-3/8&quot; SQUARE BEARING PLATE</td>
<td>ASTM A36, MECHANICAL TUBE: ASTM A512, A513 OR A519, ASSEMBLY GALVANIZED</td>
</tr>
<tr>
<td>B36E27010</td>
<td>1-3/8&quot; NIPPLE</td>
<td>SCH 40 BLACK WELDED STEEL</td>
</tr>
<tr>
<td>B36E2710</td>
<td>1/2&quot; NPT BALL VALVE</td>
<td>PVC</td>
</tr>
<tr>
<td>B36E2720</td>
<td>3/4&quot; NPT BALL VALVE</td>
<td>PVC</td>
</tr>
<tr>
<td>B36E2730</td>
<td>3/4&quot; NPT PLUG</td>
<td>PVC</td>
</tr>
<tr>
<td>B36E2740</td>
<td>1/2&quot; NPT PLUG</td>
<td>PVC</td>
</tr>
<tr>
<td>B36E2750</td>
<td>1/2&quot; NPT VALVE</td>
<td>PVC</td>
</tr>
<tr>
<td>B36E2760</td>
<td>1/2&quot; NPT BALL VALVE</td>
<td>PVC</td>
</tr>
<tr>
<td>B36E2770</td>
<td>1/2&quot; NPT BALL VALVE</td>
<td>PVC</td>
</tr>
<tr>
<td>0000783</td>
<td>00 00 783</td>
<td>NORTHERN STEEL, WHITE</td>
</tr>
<tr>
<td>0000774</td>
<td>00 00 774</td>
<td>SCH 40 BLACK WELDED STEEL</td>
</tr>
</tbody>
</table>

### Notes:
1. USERS SHALL REFER TO FDOT STANDARD SPECIFICATIONS AND PROJECT SPECIFIC CRITERIA FOR TENSION INSTALLATION, STRESSING, & GROUTING.
2. REQUIRED REINFORCING BARS ARE NOT SHOWN ON THIS DRAWING.
3. CENTER TO CENTER, END AND EDGE DISTANCE DEPENDS ON THE LOCATION OF THE BAR AND CONCRETE STRENGTH, (SEE TABLE).
4. C/C DISTANCE = 2 X END DISTANCE - 2 X CONCRETE COVER (2" ASSUMED). TIGHTER C/C DISTANCE SHOULD BE EVALUATED.
5. DUCT IS DELIVERED IN STRAIGHT SECTIONS AND IS NOT INTENDED TO BE COILED.
6. BURSTING REINFORCEMENT IS NOT SHOWN AND WILL BE INCLUDED WITH THE SHOP DRAWINGS. ALL BARS ARE STRESSED FROM ONE END ONLY.

### WARNING:
- Do not use with hands or sharp edges.
- Take it from the manufacturer in a sealed container.

### CAUTION:
- Do not use with hands or sharp edges.
- Take it from the manufacturer in a sealed container.

### IMPORTANT:
- Do not use with hands or sharp edges.
- Take it from the manufacturer in a sealed container.

### Submittal to
- ORIGINAL RECEIVER
- THEY ARE ALSO NOT TO BE SHOWN OR EXPLAINED FOR ANY REASON TO A THIRD PARTY OTHER THAN FOR REASONS EXPRESSLY INTENDED BY DSI's SUBMITTAL TO THE ORIGINAL RECEIVER. THEY HAVE TO BE RETURNED UPON REQUEST.

---

**External Grouted System for 1-3/8" (36mm) Threadbar Assembly**

---

**Surface Mount Detail**

---

**Bar Coupling**

---

**Alternate HDPE Pipe Coupling**

---

**Warning:**
- Do not use with hands or sharp edges.
- Take it from the manufacturer in a sealed container.

---

**HDPE Pipe Coupling**

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**Notes:**
- Users shall refer to FDOT standard specifications and project specific criteria for tension installation, stressing, & grouting.
- Required reinforcing bars are not shown on this drawing.
- Maximum angular misalignment when using anchor nut: ±2°.
- Center to center, end and edge distance depends on the location of the bar and concrete strength (see table).
- C/C distance = 2 x end distance - 2 x concrete cover (2" assumed). Tighter C/C distance should be evaluated.
- Duct is delivered in straight sections and is not intended to be coiled.
- Bursting reinforcement is not shown and will be included with the shop drawings. All bars are stressed from one end only.
**RIGHT HAND THREAD**

<table>
<thead>
<tr>
<th>PART NUMBERS</th>
<th>SPECIFICATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>FOR BARE BAR: B36E CUT</td>
<td>ASTM A722 TYPE II</td>
</tr>
</tbody>
</table>

**PHYSICAL PROPERTIES**

- **EFFECTIVE AREA:** 1.58 SQ.IN. (1019 SQ.mm)
- **ULTIMATE STRENGTH:** 150 KSI (1034 N/SQ.mm)
- **ULTIMATE LOAD:** 237 KIPS (1054 KN)
- **YIELD LOAD:** 191.2 KIPS (851 KN)
- **WEIGHT:** 5.56 LBS./FT. (8.27 Kg/m)
- **MAX. BAR Ø INCL. RIBS:** 1.63 IN. (41.4mm)
- **AVERAGE CORE Ø:** 1.40 IN. (35.6mm)
- **PITCH:** 0.709 IN. (18.0mm)
NOTES:
1. PLATE & PIPE GALVANIZED ACCORDING TO ASTM A123 AFTER WELDING.
2. DIMENSIONS AND TOLERANCES APPLY TO UNCOATED PLATES.
3. ENSURE THREADABILITY OF TAPPED HOLES IN COATED PLATES.
4. 3" SDR 17 HDPE PIPE U00055112 FITS OVER TUBING.
NOTES:
1. PLATE & PIPE GALVANIZED ACCORDING TO ASTM A123 AFTER WELDING.
2. DIMENSIONS AND TOLERANCES APPLY TO UNCOATED PLATES.
3. ENSURE THREADABILITY OF TAPPED HOLES IN COATED PLATES.
4. 3" SDR 17 HDPE PIPE UDD0055112 FITS OVER TUBING.

RECTANGULAR BEARING PLATE WITH EXIT PIPE FOR
1-3/8" (36mm) THREADBAR TO BE USED WITH HDPE PIPE

DIMENSIONS: INCH [mm]

DATE: 05/28/20 | DWG: G. MALEKCI | CHK: S.L | APP: S.L

TOLERANCES: 0.020 UNLESS NOTED

WEIGHT 27.0 LBS.

REVI. DATE NAME

PART NUMBER: B36E22420

DRAWING NUMBER: B36E22420

DYWIDAG-SYSTEMS INTERNATIONAL, USA, INC.
POST TENSIONING / REINFORCING UNIT PHONE: 830-739-1100
320 MARMON DRIVE - BOLINGBROOK, IL FAX: 830-739-1405
SQUARE BEARING PLATE WITH EXIT PIPE FOR 1-3/8" (36mm) THREADBAR TO BE USED WITH HDPE PIPE

NOTES:
1. PLATE & PIPE GALVANIZED ACCORDING TO ASTM A123 AFTER WELDING.
2. DIMENSIONS AND TOLERANCES APPLY TO UNCOATED PLATES.
3. ENSURE THREADABILITY OF TAPPED HOLES IN COATED PLATES.
4. 3" SDR 17 HDPE PIPE U00055112 FITS OVER TUBING.
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WASHER FOR NYLON CAPS

STAINLESS STEEL 316L BOLTS AND WASHER FOR NYLON CAPS

<table>
<thead>
<tr>
<th>POS.</th>
<th>PART NUMBER</th>
<th>DESCRIPTION (ALL PARTS 316L STAINLESS STEEL UNLESS NOTED)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>00 00 771</td>
<td>3/8&quot;-16UNC HEX BOLT, 2-3/4&quot; LONG (1&quot; LONG THREAD)</td>
</tr>
<tr>
<td>2</td>
<td>00 00 772</td>
<td>3/8&quot;-16UNC HEX BOLT, 3-1/2&quot; LONG (1&quot; LONG THREAD)</td>
</tr>
<tr>
<td>3</td>
<td>00 00 774</td>
<td>TYPE A NARROW WASHER FOR 3/8&quot;-UNC BOLT</td>
</tr>
<tr>
<td>4</td>
<td>00 00 776</td>
<td>3/8&quot;-16UNC COUPLER, ZINC COATED</td>
</tr>
<tr>
<td>5</td>
<td>00 00 777</td>
<td>3/8&quot;-16UNC HEX NUT</td>
</tr>
<tr>
<td>6</td>
<td>00 00 778</td>
<td>5/16&quot;-18UNC HEX BOLT, 7/8&quot; LONG, ZINC PLATED</td>
</tr>
<tr>
<td>7</td>
<td>00 00 783</td>
<td>3/8&quot;-16UNC HEX BOLT, 3-1/4&quot; LONG (1&quot; LONG THREAD)</td>
</tr>
<tr>
<td>8</td>
<td>00 00 784</td>
<td>3/8&quot;-16UNC HEX BOLT, 4-1/4&quot; LONG (FULL THREAD)</td>
</tr>
<tr>
<td>9</td>
<td>00 00 789</td>
<td>3/8&quot;-16UNC CARRIAGE BOLT, 4-1/2&quot; LONG</td>
</tr>
<tr>
<td>10</td>
<td>00 00 790</td>
<td>3/8&quot;-16UNC CARRIAGE BOLT, 5-1/2&quot; LONG</td>
</tr>
</tbody>
</table>

NOTE:
The 316L S.S. BOLTS ARE SPECIAL ORDER. ALL WASHERS, HEX NUTS & COUPLERS HAVE NO MARKINGS.
1-3/8" GROUTABLE ANCHOR NUTS FOR THREADBAR GR. 150

THREAD ACCORDING TO TOLERANCE
DRAWING 8341/722
MINOR DIAMETER:
1.429–1.433
(36.30–36.40)

ø3.150
ø80,0

3.531
89,7

2.390
60,7

DIAMETERS: INCH/mm
mm FOR REFERENCE ONLY
QUALITY PLAN NUMBER:
G8E0020100F

TOLERANCES:
±0.035
UNLESS NOTED

WEIGHT
3.2
LBS.

MATERIAL:
C1045 FORGING
ASTM A291-CF MOD.
NORMALIZED
BHN = 180-220

SCALE
1:2

REV. DATE NAME

DIMENSIONS: INCH/mm

PART NUMBER:
B36E24210

DRAWING NUMBER:
B36E24200

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DYWIDAG-SYSTEMS INTERNATIONAL, USA, INC.
320 MARMON DRIVE - BOLINGBROOK, IL 60440
PHONE: 630-739-1100 FAX: 630-739-1405
NOTES:
1. COUPLERS ALSO SUITABLE FOR GRADE 160 THREADBARS.
2. I.D. DEVIATES FROM STANDARD THREADFORM DRAWING.

<table>
<thead>
<tr>
<th>NOMINAL SIZE</th>
<th>1-3/8&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>PART NUMBERS</td>
<td>36mm</td>
</tr>
<tr>
<td>FOR COUPLERS:</td>
<td></td>
</tr>
<tr>
<td>WITHOUT SET SCREWS</td>
<td>B36E30710</td>
</tr>
<tr>
<td>O.D. (IN./mm)</td>
<td>2.500/63.5</td>
</tr>
<tr>
<td>I.D. (IN./mm)</td>
<td>1.433/36.4</td>
</tr>
<tr>
<td>L (IN./mm)</td>
<td>8.750/222.3</td>
</tr>
<tr>
<td>THREADFORM:</td>
<td>8341/722</td>
</tr>
<tr>
<td>TOLERANCE FOR:</td>
<td></td>
</tr>
<tr>
<td>O.D. (IN.)</td>
<td>+0.250/-0</td>
</tr>
<tr>
<td>I.D. (IN.)</td>
<td>±0.004</td>
</tr>
<tr>
<td>L (IN.)</td>
<td>±1/16</td>
</tr>
<tr>
<td>WEIGHT (LBS.)</td>
<td>10.00</td>
</tr>
</tbody>
</table>
1/2" NPT NYLON PLUG

PRESSURE RATED: 150 PSI
1/2" NPT PIPE NIPPLES

PRESSURE RATED: 150 PSI

LENGTH VARIES

1/2" NPT THREAD TYP.

0.840 [21.3]
(NOMINAL)
LENGTH VARIES

3/4" NPT THREAD TYP.

PHRASE RATED: 150 PSI

3/4" NPT PIPE NIPPLES

MATERIAL:
SCH 40
BLACK WELDED STEEL

SCALE: 1:1
3/4" NPT NYLON PLUG

DIMENSIONS: INCH (mm)
mm FOR REFERENCE ONLY

QUALITY PLAN NUMBER:

WEIGHT 0.009 LBS.

REV. DATE NAME

MATERIAL: NYLON 6
COLOR: WHITE

SCALE 1:1

PRESSURE RATED: 150 PSI

DYWIDAG-SYSTEMS INTERNATIONAL, USA, INC.
320 MARMON DRIVE - BOLINGBROOK, IL 60440
PHONE: 630-739-1100     FAX: 630-739-1405
1/2" NPT BALL VALVE

⚠️ NOTE:
PRESSURE RATED: 150 PSI.

DIMENSIONS:
- 2.130 [54.1]
- 0.1145 [29.1]
- 2.760 [70.1]
- 1.480 [37.6]

MATERIAL: PVC
SCALE: 1:1

DYWIDAG-SYSTEMS INTERNATIONAL, USA, INC.
320 MARMON DRIVE - BOLINGBROOK, IL 60440
PHONE: 630-739-1100  FAX: 630-739-1405

DRAWING NUMBER: 00 00 634

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PART NUMBER: 00 00 634

QUALITY PLAN NUMBER:

WEIGHT:
0.138 LBS.

REV. DATE NAM.
1 01-11-19 S.I.
3/4" NPT BALL VALVE

NOTE:
PRESSURE RATED: 150 PSI.
MATERIAL: 3" SDR 17 HDPE PIPE.

SPECIFICATIONS:
1. PIPE SHALL BE OF HIGH-DENSITY POLYETHYLENE AND SHALL HAVE A MAXIMUM DIMENSION RATIO (DR) OF 17 AS ESTABLISHED BY EITHER ASTM D3035 OR ASTM F714, AS APPROPRIATE FOR MANUFACTURING PROCESS USED.
2. PIPE SHALL HAVE A MINIMUM PRESSURE RATING OF 125 PSI.
3. MEETS REQUIREMENTS OF ASTM D3350 WITH A MINIMUM CELL CLASS OF 445574C.
4. CONTAINS ANTIOXIDANTS WITH A MINIMUM OXIDATIVE-INDUCTION TIME (OIT) ACCORDING TO ASTM D3895 OF 40 MINUTES.
5. REMOLDED FINISHED MATERIAL HAS A MINIMUM FAILURE TIME OF THREE HOURS WHEN TESTED FOR STRESS CRACK RESISTANCE USING ASTM F2136 AT AN APPLIED STRESS OF 348 PSI.
6. MINIMUM BEND RADIUS = 20 FT.
INSTALLATION PROCEDURE:
(SEE MANUFACTURER INSTRUCTION MANUAL FOR DETAILED INSTRUCTIONS)

1. CUT PIPE ENDS PRECISELY AT RIGHT ANGLES TO THE PIPE AXIS.
2. CLEAN BOTH PIPE ENDS CAREFULLY.
3. SCRAP BOTH PIPE ENDS AS REQUIRED TO REMOVE THE OXIDE LAYER COMPLETELY.
4. CLEAN BOTH PIPE ENDS WITH CONCENTRATED ISOPROPYL ALCOHOL.
5. USE REROUNDING TOOLS TO CORRECT OVAL PIPE IF NEEDED.
6. USE ALIGNMENT CLAMPS TO SECURE THE ALIGNMENT OF CONNECTED PIPES.
7. PROVIDE SUPPORT TO THE PIPE AND COUPLER TO PREVENT ANY MOVEMENT.
8. ENSURE THERE IS NO EXISTING GAPS BETWEEN COUPLER AND PIPE FACE.
9. ATTACH LEADS OF THE FUSION PROCESSOR TO THE COUPLER.
10. SCAN THE BARCODE ON THE COUPLER AND CONFIRM THE COUPLER'S SIZE ON THE PROCESSOR SCREEN.
11. INITIATE FUSION PROCESS.
12. UNPLUG THE LEADS AS SOON AS THE FUSION PROCESS ENDS.
13. CHECK COOLING TIME OF THE PROVIDED COUPLER BASED ON COUPLER'S SIZE.
14. DO NOT ALLOW MOVEMENT OR APPLIED PRESSURE ON THE JOINTS BEFORE COOLING TIME ENDS.
COLOR
SLEEVE WIDTH
SLEEVE SIZE
ADHESIVE (thickness as supplied)
BACKING (thickness as supplied)
CONFIGURATION

---

STANDARD ORDERING OPTIONS

- YE - YELLOW, BK - BLACK
- SLEEVE WIDTH: 63mm - 315mm (2-1/2" - 12")
- SLEEVE SIZE: 300mm, 450mm, 600mm, 900mm
- A - 0.75 mm (30 mils)
- L - 0.80 mm (31 mils)
- P - Tubular

---

MATERIAL:
ACCORDING TO FDOT SPECIFICATION
POST TENSIONING, SECTION 462 - 4, 2, 6, 3.

NOTES:
1. ORDER DIRECT FROM CANUSA
   TEL. 281 367 - 8866
   FAX. 281 367 - 4304
2. SELECT ORDER LENGTH AS A MULTIPLE OF
   THE ACTUAL LENGTH.
3. OTHER COLORS SLEEVE MAY BE AVAILABLE
   UPON REQUEST.
4. ALWAYS HEAT THE DUCT ENDS FIRST.

---

HEAT SHRINK SLEEVE SIZES
FOR INTERNAL GROUTED APPLICATIONS

<table>
<thead>
<tr>
<th>DUCT SIZE</th>
<th>STRAND SYSTEM</th>
<th>BAR SYSTEM</th>
<th>HEAT SHRINK SLEEVE SIZE</th>
<th>PART NUMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td>1&quot; x 3&quot; (25mm x 76mm)</td>
<td>4-0.6&quot;</td>
<td>1-1/4&quot; (32mm) MIN.</td>
<td>PLA-63-450 YE</td>
<td>U00044063</td>
</tr>
<tr>
<td>2-3/8&quot; (59mm)</td>
<td>7-0.6&quot;</td>
<td>1&quot; , 1-1/4&quot;, 1-3/8&quot;</td>
<td>PLA-90-450 YE</td>
<td>U00044063</td>
</tr>
<tr>
<td>3&quot; (76mm)</td>
<td>1 3/4&quot;</td>
<td>PLA-90-450 YE</td>
<td>U00044090</td>
<td></td>
</tr>
<tr>
<td>3-3/8&quot; (85mm)</td>
<td>12-0.6&quot;</td>
<td>PLA-90-450 YE</td>
<td>U00044090</td>
<td></td>
</tr>
<tr>
<td>4&quot; (100mm)</td>
<td>2-1/2&quot;</td>
<td>PLA-90-450 YE</td>
<td>U00044090</td>
<td></td>
</tr>
<tr>
<td>4&quot; (100mm)</td>
<td>19-0.6&quot;</td>
<td>PLA-115-450 BK</td>
<td>U00044115</td>
<td></td>
</tr>
<tr>
<td>4-1/2&quot; (115mm)</td>
<td>27-0.6&quot;</td>
<td>PLA-125-450 YE</td>
<td>U00044125</td>
<td></td>
</tr>
<tr>
<td>5-1/8&quot; (130mm)</td>
<td>31-0.6&quot;, 37-0.8&quot;</td>
<td>PLA-160-450 BK</td>
<td>U00044160</td>
<td></td>
</tr>
<tr>
<td>3&quot; SDR 17 HDPE PIPE</td>
<td>1-3/8&quot;</td>
<td>PLA-63-450 YE</td>
<td>U00044063</td>
<td></td>
</tr>
</tbody>
</table>

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DIMENSIONS: INCH (mm)
FOR REFERENCE ONLY

DATE: 07-31-19
DWG: G. Malicki
CHK: S.J.
APP: S.J.

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DYWIDAG-SYSTEMS INTERNATIONAL, USA, INC.
320 MARMON DRIVE - BOLINGBROOK, IL 60440
PHONE: 630-739-1100
FAX: 630-739-1405