1. **Steel Bonding Clip Detail**

- Two outer wraps field applied spiral rolled.
- Bond wire (2) and stranded copper thin insulation.
- Rubber gasket.

**Detail 1 - Notes:**

1. Steel bonding clip is optional to bond wire.
2. A minimum of two bond wires or three bonding clips are required for rubber gasketed steel pipe. Clips are to be provided in accordance with details.

2. **Bonded Joint - Embedded Cylinder Pipe**

- Non-shrink grout placed in field.
- Full gasket weld at plant.
- Rubber gasket.

**Detail 2 - Notes:**

1. Steel bonding clip is optional to bond wire.
2. A minimum of two bond wires or three bonding clips are required for rubber gasketed steel pipe. Clips are to be provided in accordance with details.

3. **Bonded Joint - Bar Wrapped Cylinder Pipe**

- Non-shrink grout placed in field.
- Full gasket weld at plant.
- Rubber gasket.

**Detail 3 - Notes:**

- Coating not shown.
- Make grommets for gasketing strap mortared in plant.
- Gasket strap see view A-A.

4. **O-Ring Steel Pipe Joint Detail**

- Cement mortar lined & tape wrapped shown. Flexible lining similar.
- 3 bonding clips required per joint see detail 1.

**Detail 4 - Notes:**

- Steel cylinder.
- Cement mortar lined & specifications.
- Rubber gasket.

5. **Bonded Joint - Mortar Coated Steel Pipe**

- Non-shrink grout placed in field.
- Full gasket weld at plant.
- Rubber gasket.

**Detail 5 - Notes:**

- Bonding not required for weld joints.
- Non-shrink grout placed in field.

6. **Electrical Continuity Bonding of Embedded Cylinder Pipe**

- Non-shrink grout placed in field.
- Full gasket weld at plant.
- Rubber gasket.

**Detail 6 - Notes:**

- Non-shrink grout placed in field.
- Full gasket weld at plant.
- Rubber gasket.

**Detail B-B - Notes:**

- Place bonding clips in interior joint recess as shown. Wire clips to bell wrap end of pipe to remove lead from weld and fill recess with cement mortar, coating all exposed steel.

**City of Houston**

**Public Works**

**Standard Ldwl, Cathodic Protection Details for Joint Bonding (Sheet 1 of 2)**

**Approved By:**

City Engineer

**Approved By:**

Director, Public Works

**Effective Date:**

Mar 20, 2018

**Org No.:**

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