**RECTIFIER ID: _____**

Project Name: _____ Project No.: _____
Start Date: _____ Owner: City of Calgary
Site Name: _____ CP Company: _____
CP Contact Name: _____ CP Contact Number: _____

## RECTIFIER INFORMATION

Rectifier ID/Name: _____ No. Positive Drains: _____
Rectifier Model: _____ No. Negative Drains: _____
Rectifier S/N: _____ A/C Voltage Input: _____
Location (GPS): _____ _____
AC Disconnect Model: _____
RMU Model: _____ RMU ESN: _____
RMU S/N: _____ _____

## GROUNDBED INFORMATION

Anode Brand and Type: _____
Total Anode Quantity: _____
Groundbed Design (Semi, Deep, Horizontal, Vertical): _____
Groundbed Pos. Cable AWG: _____
Structure Neg. Cable AWG: _____

## ANODE JUNCTION BOX / SPLITTER PANEL (IF APPLICABLE)

Box/Panel (1) ID Name: _____ Box/Panel (3) ID Name: _____
Box/Panel S/N: _____ Box/Panel S/N: _____
Anode Quantity: _____ Anode Quantity: _____

Box/Panel (2) ID Name: _____ Box/Panel (4) ID Name: _____
Box/Panel S/N: _____ Box/Panel S/N: _____
Anode Quantity: _____ Anode Quantity: _____

**STRUCTURE ID: _____**

| NEGATIVE STRUCTURE LEAD INSTALLATION | | | |
|---|---|---|---|
| **Thermite Welding & Recoat** | | | |
| **TASK** | **✓/×** | **N/A** | **REMARKS** |
| Materials Inspected for Defects / Damage? | | | |
| Materials Meet CoC 503.01.00 Approved Materials? | | | |
| Pipe Coating Removed and Surface Prepared? | | | |
| Pipe Wall Thickness Measured? | | | Wall Thickness Measured: |
| Negative Cable Crowsfooted into 3-Strand and 4-Strand Bundles? | | | |
| Copper Sleeve Required/Used? | | | |
| #15CP Charge Used for Welding? | | | |
| Thermite Weld Successful? | | | **IF FAILED, MOVE WELD MIN. 150MM AWAY** |
| Slag Removed from Weld? | | | |
| **Pictures of Welds Taken Before Recoating?** | | | |
| Type/Brand of Recoat System to be used for Welds | | | Brand: |
| Materials Inspected for Defects / Damage? | | | Batch #: |
| Pipe Heated Prior to Recoat System Being Applied? | | | |
| Primer Applied and Dry to Touch (if applicable)? | | | |
| Recoat System Applied According to Manufacturer's Qualified Application Procedure (MQAP)? | | | |
| Recoat System Successfully Adhered to Structure Including All Corners and Edges? | | | |
| **Pictures of Every Recoat Taken Before Backfilling?** | | | |
| IFC's Redlined for As Builts? | | | |
| **Mechanical Connection** | | | |
| **TASK** | **✓/×** | **N/A** | **REMARKS** |
| Materials Inspected for Defects / Damage? | | | |
| Materials Meet CoC 503.01.00 Approved Materials? | | | |
| Flange/Valve Cleaned Around Area of Clamp Contact? | | | |
| Clamp/Bracket Securely Tightened to Structure? | | | |
| Negative Structure Lead Securely Tightened to Clamp/Bracket? | | | |
| Negative Structure Lead Confirmed Continuous to Structure? | | | |
| **Picture of Mechanical Connection Taken?** | | | |
| Clamp/Bracket Wrapped/Coated to Prevent Corrosion? | | | |
| IFC's Redlined for As Builts? | | | |

| Negative Structure Leads Install Sign Off | | |
|---|---|---|
| **Installer Name:** | **Initials:** | **Date (MM/DD/YY):** |
| | | |

***Print copies of this sheet and fill out according to the number of structures required***

**GROUNDBED NO.: _____**

| ANODE GROUNDBED INSTALLATION | | | |
|---|---|---|---|
| **Vertical Semi-Deep / Deep Well Groundbed** | | | |
| **TASK** | **✓/×** | **N/A** | **REMARKS** |
| AB One Call & Line Locate Completed Around Install Area and Area Confirmed Free of Other Utilities? | | | |
| Location of Well Site Confirmed with IFC's? | | | |
| Well Drilled to Correct Depth as per IFC's? | | | Depth of Well: |
| Centralizers Securely Attached to Anodes? | | | |
| Anodes Installed in Correct Order/Length? | | | |
| Well Pumped with Coke Breeze and Allowed to Settle? | | | |
| Top of Well Capped with Native Backfill or Bentonite to Cable Trench Depth? | | | |
| Anode Cables Routed in Cable Trench to JB / Panel? | | | |
| Cables Backfilled with Sand or Native Backfill to 300mm Below Grade? | | | |
| "Caution: Buried Cable" Tape Laid in Trench Over the Anode Cables? | | | |
| Trench Completely Backfilled to Final Grade? | | | |
| IFC's Redlined for As Builts? | | | |
| **Horizontal Groundbed** | | | |
| **TASK** | **✓/×** | **N/A** | **REMARKS** |
| AB One Call & Line Locate Completed Around Install Area and Area Confirmed Free of Other Utilities? | | | |
| Location of Horizontal Groundbed Confirmed with IFC's? | | | |
| Trench Dug to Correct Depth as per IFC's? | | | Depth of Trench: |
| Lower Layer of Coke Breeze Laid Prior to Anode? | | | |
| Anode Canister Perforated Prior to Install? | | | |
| Anodes Laid in Trench at Correct Spacing as per IFC's? | | | Anode Spacing: |
| Anodes Crimped and Spliced to Header Cable Using C-Tap and 3-Tape Method? (Scotchfil Insulating Putty, 130C Splicing Tape, Electrical Tape) | | | |
| Upper Layer of Coke Breeze Laid Over Anode? | | | |
| Anodes Wetted with Water Prior to Backfilling? | | | |
| Anodes Backfilled with Native Backfill Material to 300mm Below Grade? | | | |
| "Caution: Buried Cable" Tape Laid in Trench Over the Anode Cables? | | | |
| Trench Completely Backfilled to Final Grade? | | | |
| IFC's Redlined for As Builts? | | | |

| Anode Groundbed Install Sign Off | | |
|---|---|---|
| **Installer Name:** | **Initials:** | **Date (MM/DD/YY):** |
| | | |

***Print copies of this sheet and fill out according to the number of groundbeds required***

**BOX / PANEL NO.: _____**

| ANODE JUNCTION BOX / SPLITTER PANEL INSTALLATION | | | |
|---|---|---|---|
| **TASK** | **✓/×** | **N/A** | **REMARKS** |
| Box / Panel Installed Securely to Wall or Post at Height Specified on IFC? | | | Box Height: |
| All Leads Terminated Correctly in Box / Panel as per IFC's? | | | |
| All Leads Labelled Correctly with Weather Resistant Labels (Shrink Sleeves)? | | | |
| Resistance of Groundbed Measured? (If Required) | | | Resistance: |
| Header Cable to Rectifier Installed min. 600mm Below Grade? | | | |
| "Caution: Buried Cable" Tape Laid in Trench Over the Buried Cables? | | | |
| Trench Completely Backfilled to Final Grade? | | | |
| IFC's Redlined for As Builts? | | | |

| Anode Junction Box / Splitter Panel Install Sign Off | | |
|---|---|---|
| **Installer Name:** | **Initials:** | **Date (MM/DD/YY):** |
| | | |

## ANODE JUNCTION BOX / SPLITTER PANEL - MEASUREMENTS

| | **Shunt Size** | **Current (A) - Commissioned** |
|---|---|---|
| Anode 1: | | |
| Anode 2: | | |
| Anode 3: | | |
| Anode 4: | | |
| Anode 5: | | |
| Anode 6: | | |
| Anode 7: | | |
| Anode 8: | | |
| Header to Rectifier: | | |

Tech Name & Date: _____ _____

***Print copies of this sheet and fill out according to the number of Junction Boxes / Splitter Panels required***

| RECTIFIER INSTALLATION & COMMISSION | | | |
|---|---|---|---|
| TASK | ✓/× | N/A | REMARKS |
| Rectifier Securely Mounted to Wall / Post? | | | |
| Rectifier and RMU Unit Information Recorded on QAQC Sheet? | | | |
| AC Disconnect Installed by Electrician Within Arm's Reach? | | | |
| AC Input Cables Installed in Rectifier by Electrician? | | | |
| DC Cables Installed Correctly? (Black/Anode to +, White/Structure to -) | | | |
| Energization Completed and Successful? | | | |
| RMU Confirmed Activated and Configured? | | | |
| Tap Settings Adjusted to Correct Level? | | | |
| Voltage & Amperage Measured and Recorded? | | | |
| Commissioning Survey Performed after 2 Weeks Energization? | | | |
| Final Voltage & Amperage Measured and Recorded? | | | |
| IFC's Redlined for As-Builts? | | | |

| Rectifier Install & Commission Sign Off | | |
|---|---|---|
| **Installer Name:** | **Initials:** | **Date (MM/DD/YY):** |
| | | |

## RECTIFIER – MEASUREMENT DATA

| Date | Status | Tap Settings | Voltage (V) | Current (A) |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

**Status List**
**AE = As Energized**
**AF = As Found**
**AL = As Left**
**AA = As Adjusted**

Additional Comments:

| QA/QC DOCUMENT SIGN OFF | | | |
|---|---|---|---|
| `This is to be completed and signed off once all tasks associated with the identified Rectifier & Groundbeds has been completed. Both Prime and CP Contractor approves and is confident that all CP related items have been installed according to the IFC drawings and CoC Waterworks Construction Standards. | | | |
| **CP Contractor:** | | | |
| | **NAME** | **SIGNATURE** | **DATE (MM/DD/YY)** |
| **Prime Contractor:** | | | |
| | **NAME** | **SIGNATURE** | **DATE (MM/DD/YY)** |