

**CW 3210 – ADJUSTMENT OF PAVEMENT AND BOULEVARD STRUCTURES**

**TABLE OF CONTENTS**

1. DESCRIPTION.....1

    1.1 General .....1

    1.3 Referenced Standard Construction Specifications .....1

    1.4 Referenced Standard Details.....1

**1.5 Referenced Approved Product Drawings .....1**

2. MATERIALS.....2

**2.1 Approved Products .....2**

**2.2 Frames and Covers .....2**

    2.3 Drainage Connection Pipe.....2

**2.4 Lifter Ring.....2**

    2.5 Valve Box Extensions .....2

**2.6 Curb Stop Extensions .....2**

    2.7 Concrete Brick .....2

    2.8 Joint Material.....2

    2.9 Curb Inlet Frames .....2

**2.10 Curb Inlet Box Covers.....2**

    2.11 Grout.....2

3. CONSTRUCTION METHODS .....2

**3.1 General .....2**

**3.2 Adjustment of Manholes/Catch Basins Frames .....3**

    3.3 Adjustment of Curb and Gutter Frames .....3

**3.4 Adjust Curb Inlet with Inlet Box .....4**

    3.5 Adjustment of Valve Box.....4

**3.6 Adjustment of Curb Stops .....5**

    3.7 Lifter Ring.....5

    3.8 Valve Box Extensions .....5

**3.9 Mountable Curb Paving Cover .....5**

**3.10 Adjustment of Traffic Signal Service Box Frames .....5**

4. MEASUREMENT AND PAYMENT .....6

    4.1 Adjustment of Manholes/Catch Basins Frames .....6

    4.2 Adjustment of Curb and Gutter Frames .....6

**4.3 Frames and Covers .....6**

    4.4 Adjustment of Curb Inlet with New Inlet Box.....6

**4.5 Curb Inlet Box Covers.....7**

**4.6 Curb Inlet Frames .....7**

    4.7 Adjustment of Valve Boxes .....7

    4.8 Valve Box Extensions .....7

    4.9 Adjustment of Curb Stop Boxes.....7

**4.10 Curb Stop Extensions .....7**

    4.11 Lifter Rings.....7

    4.12 Adjustment of Traffic Signal Service Box Frames .....8

**CW 3210 – ADJUSTMENT OF PAVEMENT AND BOULEVARD STRUCTURES****1. DESCRIPTION****1.1 General**

- .1 This specification covers the adjustment of pavement and boulevard structures including existing manholes and catch basin frames, curb and gutter inlet frames, curb inlets with new inlet box, water valves and curb stops.

**1.3 Referenced Standard Construction Specifications**

- .1 CW 1120 – Existing Services, Utilities and Structures
- .2 CW 1130 – Site Requirements
- .3 CW 2030 – Excavation Bedding and Backfill
- .4 CW 2130 – Gravity Sewers
- .5 CW 2160 – Concrete Underground Structures and Works
- .6 CW 3110 – Sub-Grade, Sub-Base and Base Course Construction
- .7 CW 3230 – Full-Depth Patching of Existing Slabs and Joints
- .8 CW 3235 – Renewal of Existing Miscellaneous Concrete Slabs
- .9 CW 3310 – Portland Cement Concrete Pavement Works

**1.4 Referenced Standard Details**

- .1 SD – 002 Standard Trench and Excavation Backfill Classes
- .2 SD – 010 Standard Precast Concrete Manhole  
(For up to 525 Diameter Pipe)
- .3 SD – 011 Standard Precast Concrete Manhole  
(For 600 to 1500 Diameter Pipe)
- .4 SD – 016 Standard Watermain Valve Installation
- .5 SD – 023 Catchpit
- .6 SD – 024 Catch Basin
- .7 SD – 221 Curb Inlet with Catch Basin in Pavement
- .8 SD – 222 Curb Inlet with Catch Basin in Boulevard

**1.5 Referenced Approved Product Drawings**

- .1 AP-002 – Watermain Valve Box Extension
- .2 AP-006 – Standard Frame for Manhole and Catch Basin (Manhole Frame)
- .2 AP-007 – Standard Solid Cover for Standard Frame (Solid Manhole Cover)
- .3 AP-008 – Standard Grated Cover for Standard Frame (Grated Manhole Cover)
- .5 AP-009 – Beehive Manhole Cover
- .4 AP-010 – Lifter Ring (Manhole Riser Ring)
- .5 AP-011 – Barrier Curb and Gutter Frame (Barrier Curb Frame)
- .6 AP-012 – Barrier Curb and Gutter Cover (Barrier Curb Cover)
- .7 AP-015 – Mountable Curb and Gutter Frame (Mountable Curb Frame)
- .8 AP-016 – Mountable Curb and Gutter Cover (Mountable Curb Cover)
- .9 AP-017 – Mountable Curb and Gutter Paving Cover (Mountable Curb Paving Cover)
- .10 AP-018 – Modified Barrier Curb and Gutter Frame (Modified Barrier Curb Frame)
- .11 AP-019 – Modified Barrier Curb and Gutter Cover (Mountable Barrier Curb Cover)
- .12 AP-020 – Curb Inlet Box Cover
- .13 AP-021 – Integrated Side Inlet and Cover

## 2. MATERIALS

### 2.1 Approved Products

- .1 "AP's" are references to detail drawings in the Approved Products for Underground Use in the City of Winnipeg, found on the City of Winnipeg, Materials Management web site at: <http://www.winnipeg.ca/matmgt/spec/default.stm>

### 2.2 Frames and Covers

- .1 Frames and covers in accordance with AP-006, AP-007, AP-008, AP-009, AP-011, AP-012, AP-015, AP-016, AP-017, AP-019, AP, AP-020 and AP-021 .

### 2.3 Drainage Connection Pipe

- .1 Drainage connection pipe, fittings, gaskets and other accessories in accordance with CW 2130.

### 2.4 Lifter Ring

- .1 Lifter ring in accordance with AP-010.

### 2.5 Valve Box Extensions

- .1 Valve box extensions in accordance with AP-002.

### 2.6 Curb Stop Extensions

- .1 Curb stop extensions "Milk Bottle" type, grey iron Class 20 in accordance with ASTM A48. TF-200 as manufactured by Titan Foundry.

### 2.7 Concrete Brick

- .1 Concrete brick in accordance with CAN 3 – A165 series.

### 2.8 Joint Material

- .1 Joint material shall be preformed bituminous gaskets or flexible Butyl rubber joint sealant as approved by the Contract Administrator.

### 2.9 Curb Inlet Frames

- .1 Acceptable Curb inlet frames are TF-110 and TF-111 as manufactured by Titan Foundry.

### 2.10 Curb Inlet Box Covers

- .1 Curb inlet box covers in accordance with AP-020.

### 2.11 Grout

- .1 Grout shall be one part Type 50 Portland cement and one part sand in accordance with CW 2160.

## 3. CONSTRUCTION METHODS

### 3.1 General

- .1 Dispose of damaged materials in accordance with Section 3.4 of CW 1130.

- .2 Inspect existing manholes, catch basin, catchpits and inlet boxes prior to commencing work in accordance with Section 3.8 of CW 1120 to record amount of existing debris.
- .3 Load and deliver all surplus materials to Water and Waste Department, Water Services Division yard located at 552 Plinquet Street as directed by the Contract Administrator. Unload salvaged material as directed by City personnel.
- .4 Remove construction debris and materials from manholes, catch basins, catchpits and inlet boxes when work is complete.
- .5 Supply and install precast concrete riser sections and flat top reducers in accordance with Section 3.13 of CW 2130 as directed by the Contract Administrator.
- .6 Remove and construct pavement required to complete adjustments in accordance with CW 3110, CW 3230, CW 3235 and CW 3310.
- .7 No measurement or payment will be made for replacing pavement and boulevard structures/appurtenances damaged or lost during adjustment.

### **3.2 Adjustment of Manholes/Catch Basins Frames**

- .1 Adjust existing manhole and catch basin frames at locations shown on the Drawings or as directed by the Contract Administrator.
- .2 For paved areas, remove pavement without damaging frame.
- .3 Further to 3.1.7, supply new frames and/or covers to replace damaged/lost materials.
- .4 Prevent construction material and debris from entering sewers.
- .5 Remove existing grout and bricks without damaging precast concrete riser sections or flat top reducers.
- .6 Replace, remove or add precast concrete riser sections in accordance with 3.13 of CW 2130 as directed by the Contract Administrator.
- .7 Set frame to finished grade with bricks or as approved by Contract Administrator. Distance between bottom of frame and precast riser section or flat top reducer shall not exceed 75 millimetres.
- .8 For adjustments of frames within concrete pavements with asphalt overlays, set frame 50 millimetres below finished grade to allow for installation of a lifter ring. Supply and install lifter ring in accordance with Section 3.7 of this specification.
- .9 Grout frame inside and out to make watertight. Remove excess grout from inside of manhole or catch basin.
- .10 Place and compact Class 2 backfill as required in accordance with CW 2030 and SD-002.

### **3.3 Adjustment of Curb and Gutter Frames**

- .1 Adjust existing curb and gutter frames at locations shown on the Drawings or as directed by the Contract Administrator.
- .2 Remove pavement without damaging frame.

- .3 Further to 3.1.7, supply new frames and/or covers to replace damaged/lost materials.
- .4 Prevent construction material and debris from entering sewer.
- .5 Remove existing grout and bricks without damaging flat top reducer.
- .6 Replace, remove or add precast concrete riser sections in accordance with 3.13 of CW 2130 as directed by the Contract Administrator.
- .7 Set frame to finished grade with brick as approved by Contract Administrator. Distance between bottom of frame and flat top reducer shall not exceed 75 millimetres.
- .8 Adjust curb portion of frame to match finished curb height.
- .9 Grout frame inside and out to make watertight. Remove excess grout from inside of catch basin or catchpit.
- .10 Place and compact Class 2 backfill as required in accordance with CW 2030 and SD-002.

### **3.4 Adjust Curb Inlet with Inlet Box**

- .1 Adjust existing curb inlet with new inlet box as shown on the Drawings or as directed by the Contract Administrator.
- .2 Remove concrete without damaging the frame.
- .3 Remove the curb inlet frame and drainage pipe as required for installation of a new inlet box.
- .4 Further to 3.1.7, supply new curb inlet frames, boxes and/or covers to replace damaged/lost materials.
- .5 Install curb inlet frame to match finished grade of curb.
- .6 Construct new inlet box in accordance with SD-221 and SD-222 and supply Type 2 concrete in accordance with CW 3310.
- .7 Install drainage connection pipe as required from the new inlet box to the catch basin in accordance with Section 3.11 of CW 2130.
- .8 Install new inlet box cover as required.
- .9 Place and compact Class 4 backfill as required in accordance with CW 2030 and SD-002.

### **3.5 Adjustment of Valve Box**

- .1 Adjust existing valve box at locations shown on the Drawings or as directed by the Contract Administrator.
- .2 For paved areas, remove pavement without damaging the valve box.
- .3 Further to 3.1.7, supply new valve boxes to replace damaged/lost materials.
- .4 Raise or lower upper section of valve box in accordance with SD-016 to match the finished grade of pavement, sidewalk or grassed area.
- .5 When upper section of valve box cannot be adjusted, supply and install valve box extension in

accordance with 3.8 of this specification.

### **3.6 Adjustment of Curb Stops**

- .1 Adjust existing curb stops at locations shown on the Drawings or as directed by the Contract Administrator.
- .2 For paved areas, remove pavement and excavate as required without damaging the curb stop.
- .3 Further to 3.1.7, supply new curb stop parts to replace damaged/lost materials.
- .4 Raise or lower upper section of curb stop to match finished grade of sidewalk or grassed area.
- .5 When lid is damaged or upper section of curb stop cannot be adjusted, supply and install curb stop extension.

### **3.7 Lifter Ring**

- .1 Install lifter ring of variable heights at locations as shown on the Drawings or directed by the Contract Administrator.
- .2 Remove existing cover, clean existing frame, install lifter ring and reinstall cover.
- .3 Use minimum number of lifter rings to adjust manhole/catch basin to finished grade as approved by the Contractor Administrator.

### **3.8 Valve Box Extensions**

- .1 Install valve box extension at locations shown on the Drawings or as directed by the Contract Administrator.
- .2 Remove existing lid, clean existing valve box and install valve box extension to finished grade.
- .3 Orientate lid to close in the direction of traffic.

### **3.9 Mountable Curb Paving Cover**

- .1 Install at locations as shown on the Drawings or directed by the Contract Administrator.
- .2 Remove existing cover, clean existing frame, install new paving cover to finished grade as approved by the Contract Administrator

### **3.10 Adjustment of Traffic Signal Service Box Frames**

- .1 Adjust existing or new traffic signal service box frames at locations shown on the Drawings or as directed by the Contract Administrator.
- .2 For paved areas, remove miscellaneous concrete slabs without damaging frame or service box.
- .3 Further to 3.1.7, supply new frames and/or covers to replace damaged/lost materials.
- .4 Prevent construction material and debris from entering the existing service box.
- .5 New frames and covers will be supplied by the Traffic Signals Branch as approved by the Contract Administrator.
- .6 Install cardboard form tubing as required to complete the adjustment.

- .7 Pour frames monolithic with placement of concrete for paved areas.
- .8 For interlocking paving stone areas, entire concrete wall of service box to match finished grade.
- .9 Set frame to finished grade as approved by the Contract Administrator.
- .10 Place and compact Class 2 backfill as required in accordance with CW 2030 and SD-002.

#### 4. MEASUREMENT AND PAYMENT

##### 4.1 Adjustment of Manholes/Catch Basins Frames

- .1 Adjustment of existing manholes/catch basin frames will be measured on a unit basis and paid for at the Contract Unit Price per unit for "Adjustment of Manholes/Catch Basins Frames". The number of units to be paid for will be the total number of existing catch basins and manholes frames adjusted in accordance with this specification, accepted and measured by the Contract Administrator.
- .2 New precast concrete riser sections shall be paid for in accordance with CW 2130.

##### 4.2 Adjustment of Curb and Gutter Frames

- .1 Adjustment of existing curb and gutter frames will be measured on a unit basis and paid for at the Contract Unit Price per unit for "Adjustment of Curb and Gutter Frames". The number of units to be paid for will be the total number of existing curb and gutter frames adjusted in accordance with this specification, accepted and measured by the Contract Administrator.
- .2 New precast concrete riser sections shall be paid for in accordance with CW 2130.

##### 4.3 Frames and Covers

- .1 Frames and Covers will be measured on a unit basis and paid for at the Contract Unit Price per unit for the "Items of Work" listed here below. The number of units to be paid for will be the total number of each unit supplied and installed in accordance with this specification, accepted and measured by the Contract Administrator.

###### Frames and Covers

- i.) AP-006 Standard Frame for Manhole and Catch Basin
- ii.) AP-007 Standard Solid Cover for Standard Frame
- iii.) AP-008 Standard Grated Cover for Standard Frame
- iv.) AP-009 Beehive Manhole Cover
- v.) AP-011 Barrier Curb and Gutter Frame
- vi.) AP-012 Barrier Curb and Gutter Cover
- vii.) AP-015 Mountable Curb and Gutter Frame
- viii.) AP-016 Mountable Curb and Gutter Cover
- ix.) AP-017 Mountable Curb and Gutter Paving Cover
- x.) AP-018 Modified Barrier Curb and Gutter Frame
- xi.) AP-019 Modified Barrier Curb and Gutter Cover
- xii.) AP-021 Integrated Side Inlet and Cover

##### 4.4 Adjustment of Curb Inlet with New Inlet Box

- .1 Adjustment of existing curb inlets with new inlet boxes will be measured on a unit basis and paid for at the Contract Unit Price per unit for "Adjustment of Curb Inlet with New Inlet Box". The number of units to be paid for will be the total number of existing curb inlets with new inlet boxes adjusted in accordance with this specification, accepted and measured by the Contract

Administrator.

- .1 All costs for the supply and installation of the curb inlet box covers will be included in the adjustment of the curb inlet with new inlet box.
- .2 Drainage connection pipe shall be paid for in accordance with CW 2130.

#### **4.5 Curb Inlet Box Covers**

- .1 Curb inlet box covers will be measured on a unit basis and paid for at the Contract Unit price per unit for "Curb Inlet Box Covers". The number of units to be paid for will be the total number of curb inlet box covers supplied and installed in accordance with this specification, accepted and measured by the Contract Administrator.

#### **4.6 Curb Inlet Frames**

- .1 Curb inlet frames will be measured on a unit basis and paid for at the Contract Unit price per unit for "Curb Inlet Frames". The number of units to be paid for will be the total number of curb inlet frames supplied and installed in accordance with this specification, accepted and measured by the Contract Administrator.

#### **4.7 Adjustment of Valve Boxes**

- .1 Adjustment of existing valve boxes will be measured on a unit basis and paid for at the Contract Unit price per unit for "Adjustment of Valve Boxes". The number of units to be paid for will be the total number of existing valve boxes adjusted in accordance with this specification, accepted and measured by the Contract Administrator.

#### **4.8 Valve Box Extensions**

- .1 Valve box extensions will be measured on a unit basis and paid for at the Contract Unit price per unit for "Valve Box Extensions". The number of units to be paid for will be the total number of valve box extensions supplied and installed in accordance with this specification, accepted and measured by the Contract Administrator.

#### **4.9 Adjustment of Curb Stop Boxes**

- .1 Adjustment of existing curb stop boxes will be measured on a unit basis and paid for at the Contract Unit Price per unit for "Adjustment of Curb Stop Boxes". The number of units to be paid for will be the total number of existing curb stop boxes adjusted in accordance with this Specification, accepted and measured by the Contract Administrator.
  - .1 Supply curb stop extensions in accordance with Section 4.8 of the specification.

#### **4.10 Curb Stop Extensions**

- .1 Curb stop extensions will be measured on a unit basis and paid for at the Contract Unit price per unit for "Curb Stop Extensions". The number of units to be paid for will be the total number of curb stop extensions supplied and installed in accordance with this specification, accepted and measured by the Contract Administrator.

#### **4.11 Lifter Rings**

- .1 Lifter rings will be measured on a unit basis and paid for at the Contract Unit Price per unit for the "Items of Work" listed here below. The number of units to be paid for will be the total number of lifter rings supplied and installed in accordance with this specification, accepted and measured by the Contract Administrator.

**Lifter Rings:**

- i.) 38mm
- ii.) 51mm
- iii.) 64mm
- iv.) 76mm

**4.12 Adjustment of Traffic Signal Service Box Frames**

- .1 Adjustment of existing service box frames will be measured on a unit basis and paid for at the Contract Unit price per unit for "Adjustment of Traffic Signal Service Box Frames". The number of units to be paid for will be the total number of existing or new traffic signal service box frames adjusted in accordance with this specification, accepted and measured by the Contract Administrator.