

PART 1 - GENERAL

- | | | | |
|-----|--------------------------------|----|--|
| 1.1 | <u>Related Sections</u> | .1 | Refer to other specification sections for related information. |
| 1.2 | <u>Reference Standards</u> | .1 | ASTM C478-96, Precast Reinforced Concrete Manhole Sections. |
| 1.3 | <u>Material Certification</u> | .1 | At least two weeks prior to commencing work, submit manufacturer's test data and certification that materials meet requirements of this section. Include manufacturer's drawings, information and shop drawings where pertinent. |
| 1.4 | <u>Measurement for Payment</u> | .1 | Measurement for payment will be in accordance with Section 01 29 00 – Project Particulars and Measurement. |

PART 2 - PRODUCTS

- | | | | |
|-----|------------------|----|--|
| 2.1 | <u>Materials</u> | .1 | Precast Catch Basins sections: to ASTM C478 and as detailed on the drawings. |
| | | .2 | Joints: to be made watertight using rubber rings |
| | | .3 | Adjusting Rings: to ASTM C478. |
| | | .4 | Cast-in-Place Concrete: to Section 03 30 00. |
| | | .5 | Frames, gratings, covers to plan dimensions and following requirements:
.1 Metal gratings and covers to gear evenly on frames. A frame with grating or cover to constitute one unit.
.2 Catch basin frames and covers: heavy duty municipal type for road service. |

PART 3 - EXECUTION

- | | | | |
|-----|------------------------------------|----|---|
| 3.1 | <u>Excavation
and Backfill</u> | .1 | Excavate in accordance with Section 31 11 10. |
| | | .2 | Obtain approval of Departmental Representative before installing catch basins. |
| | | | |
| 3.2 | <u>Installation</u> | .1 | Construct units in accordance with details indicated, plumb and true to alignment and grade. |
| | | .2 | Complete units as pipe laying progresses. |
| | | .3 | Pump excavation free of standing water and remove soft and foreign material before placing concrete base. |
| | | .4 | Cast bottom slabs directly on 300 mm minimum of well compacted granular sub-base material, 98% standard proctor density as per Section 32 11 19. |
| | | .5 | For precast units:
.1 Set bottom section of precast unit on 300mm minimum of compacted granular sub-base. Make each successive joint watertight with approved rubber ring gaskets.
.2 Clean surplus mortar and joint compounds from interior surface of unit as work progresses.
.3 Plug lifting holes with precast concrete plugs set in cement mortar or mastic compound. |
| | | .6 | Installing units in existing systems:
.1 Where a new unit is to be installed in an existing run of pipe, ensure full support of existing pipe during installation, and carefully remove that portion of existing pipe to dimensions required and install new unit as specified.
.2 Make joints watertight between new unit and existing pipe.
.3 Where deemed expedient to maintain service around existing pipes, and when systems constructed under this project are ready to be put in operation, complete installation with appropriate breakouts, removals and redirection of flows, blocking unused pipes or other necessary work. |

- .7 Place frame and cover on top section to elevation indicated. If adjustment is required, use concrete ring.
- .8 Clean units of debris and foreign materials. Remove fins and sharp projection. Prevent debris from entering system.

-- END OF SECTION --

PART 1 - GENERAL

- | | | | |
|-----|--------------------------------|----|---|
| 1.1 | <u>Description</u> | .1 | This section specifies requirements for supplying and installing storm sewer with bedding material to lines, grades and dimensions indicated or directed. |
| 1.2 | <u>References</u> | .1 | CAN/CSA A257 Series-M92 (or latest edition), Standards for Concrete Pipe. |
| | | .2 | ASTM C442M-94 (or latest edition), Joints for Circular Concrete Sewer and Concrete Pipe, Using Rubber Gaskets (Metric). |
| | | .3 | CAN/CSA B182.1-96 (or latest edition), Plastic Drain and Sewer Pipe and Pipe Fittings. |
| | | .4 | ASTM D3034-96 (or latest edition), Type PSM Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings. |
| 1.3 | <u>Related Work</u> | .1 | Refer to other Specification sections for related information. |
| 1.4 | <u>Samples</u> | .1 | At least 2 weeks prior to commencing work, inform Departmental Representative of proposed source of bedding materials and provide access for sampling. |
| 1.5 | <u>Scheduling of Work</u> | .1 | Schedule work to minimize interruptions to service area users. |
| 1.6 | <u>Measurement for Payment</u> | .1 | This item will not be measured separately. |

PART 2 - PRODUCTS

- | | | | |
|-----|-------------------------------|----|---|
| 2.1 | <u>Concrete Pipe</u> | .1 | Reinforced circular concrete pipe and fittings to CSA A257 Series-M92 designed for flexible rubber gasket joints to ASTM C443M. |
| | | .2 | Non-reinforced circular concrete pipe and fittings to CSA A257 designed for flexible rubber gasket joints to ASTM C443M. |
| | | | |
| 2.2 | <u>Plastic Pipe</u> | .1 | Plastic pipe to CAN/CSA B182.1, with push on joints. |
| | | .2 | Type PSM Polyvinyl Chloride (PVC) to ASTM D3034 with gasket and integral bell system. |
| | | | |
| 2.3 | <u>Pipe Bedding Materials</u> | .1 | Granular material to Section 32 11 19. |

PART 3 - EXECUTION

- | | | | |
|-----|-----------------------------------|----|--|
| 3.1 | <u>Preparation</u> | .1 | Clean pipes and fittings of debris and water before installation. Carefully inspect materials for defects before installing. Remove defective materials from site. |
| | | | |
| 3.2 | <u>Excavating and Backfilling</u> | .1 | Do excavating and backfill work in accordance with Section 31 23 10. |
| | | .2 | Do not allow contents of any sewer or sewer connection to flow into trench. |
| | | .3 | Trench line and depth require approval prior to placing bedding material and pipe. |
| | | | |
| 3.3 | <u>Granular Bedding</u> | .1 | Place granular bedding materials to details indicated or directed. |

- .2 Shape bed true to grade and to provide continuous, uniform bearing surface for barrel of pipe. Do not use blocks when bedding material.
- .3 Shape transverse depressions as required to receive bell if bell and spigot pipe is used.
- .4 Compact full width of bed to at least 100% of corrected maximum dry density.
- .5 Fill excavation below bottom of specified bedding adjacent to catch basin with bedding material as directed.

3.4 Installation

- .1 Lay and join pipe in accordance with manufacturer's recommendations.
- .2 Handle pipe by approved methods. Do not use chains or cables passed through rigid pipe bore so that weight of pipe bears upon pipe ends.
- .3 Lay pipe on prepared bed, true to line and grade with pipe inverts smooth and free of sags or high points. Ensure barrel of each pipe is in contact with shaped bed throughout its full length.
- .4 Commence laying at outlet and proceed in upstream direction with socket ends of pipe facing upgrade.
- .5 Do not exceed maximum joint deflection recommended by pipe manufacturer.
- .6 Do not allow water to flow through pipes during construction except as may be permitted by Departmental Representative.
- .7 Whenever work is suspended, install removable watertight bulkhead at open end of last pipe laid to prevent entry of foreign materials.
- .8 Position and join pipes by methods approved by Departmental Representative.

- .9 Joints:
 - .1 Install gaskets as recommended by manufacturer.
 - .2 Support pipes with hand slings or crane as required to minimize lateral pressure on gasket and maintain concentricity until gasket is properly positioned.
 - .3 Align pipes carefully before joining.
 - .4 Maintain pipe joints free from mud, silt, gravel and other foreign material.
 - .5 Avoid displacing gasket or contaminating with dirt or other foreign material. Remove disturbed or dirty gaskets; clean, lubricate and replace before joining is attempted.
 - .6 Complete each joint before laying next length of pipe.
 - .7 Minimize joint deflection after joint has been made to avoid joint damage.
 - .8 Apply sufficient pressure in making joints to ensure that joint is complete as outlined in manufacturer's recommendations.
- .10 When any stoppage of work occurs, block pipes as directed to prevent "creep" during down time.
- .11 Cut pipes as required for special inserts, fittings or closure pieces in a neat manner, as recommended by pipe manufacturer, without damaging pipe or its coating, and to leave a smooth end at right angles to axis of pipe.
- .12 Make watertight connections to catch basin. Use non-shrink grout when suitable gaskets are not available.

-- END OF SECTION --