Sanitary Sewer Connection
Repair Presentation
Methods & Techniques
Sewer Cleaning Record of Service

• The Sewer Cleaning—Record of Service, for the water and sewer section.
Clearances and Locations

• The Clearances and Locations Work Group will provide drawings, utility locations, location numbers and any required forms.
**Daily Work Sheet**

- Water & Sewer work to be preformed

### Water and Sewer Maintenance Section

<table>
<thead>
<tr>
<th>STATUS</th>
<th>LOCATION</th>
<th>REPAIRTYPE</th>
<th>PRIORITY</th>
<th>JOB #</th>
<th>Loc.</th>
<th>ACTIVITY</th>
<th>GL</th>
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### Pending Water & Sewer Work

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<tr>
<th>STATUS</th>
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<th>PRIORITY</th>
<th>JOB #</th>
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Section A shows the tasks for each Supervisor IV.
Daily Work Sheet Section B

- Section B of the Daily Work Sheet shows additional information

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Funded Maintenance Program
### Pending Water & Sewer Work

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<tr>
<th>STATUS</th>
<th>LOCATION</th>
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</table>

- Section C shows work pending.
Public Works Stores

• Supervisor IV will pick up all materials that can be transported by a ¾ ton truck.
APWA Color Codes

- Representatives from utility companies can field locate their lines if required

<table>
<thead>
<tr>
<th>Colour Code</th>
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<tr>
<td>Red</td>
<td>Electric Power Lines</td>
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<tr>
<td>Yellow</td>
<td>Gas, Oil, or Steam</td>
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<tr>
<td>Orange</td>
<td>Communications Lines, Cables, or Conduit</td>
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<tr>
<td>Blue</td>
<td>Potable Water</td>
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<tr>
<td>Purple</td>
<td>Reclaimed Water, Irrigation, and Slurry Lines</td>
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<td>Green</td>
<td>Sewers and Drain Lines</td>
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<td>Pink</td>
<td>Temporary Survey Markings</td>
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<td>Grey</td>
<td>Proposed Excavation</td>
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</table>
Trailer Location

• Keep trailers clear of the excavation site.
Excavation Site

- The excavation site may have obstructions like fences and trees.
Cutting Asphalt

• Every effort should be made to cut the asphalt or concrete
Asphalt / Concrete Recycling

- Asphalt and concrete are to be recycled.
Correct Shoring

- Correct shoring will be selected.
Excavation

- Excavating for a sewer main repair.
Sloping The Trench Walls

- Protect labourers in an excavation by sloping the walls or installing shoring.
• Calculate the size of the excavation.

Excavation Width = 2\times \text{Top Depth} + \text{Bottom Width}

1.2m
Excavation With Shoring

- Install shoring instead of sloping the excavation walls.
Spoil Piles

• Material from the trench will be sorted
Locating Buried Utilities

- Establish pipe depth using the feeling rod.
Supporting Utilities

- Support buried utilities as required.
General Excavation Safety
Struck Gas Line

• The machine must be immediately turned off
Overhead Power Lines

- Do not exit a vehicle that has contacted overhead power lines.
Danger Zone

- Do not go in between the excavator bucket and the truck being loaded.
Trench Cave-in

• No worker will enter a trench greater than 1.2m (4 feet) in depth, without a protective structure.
Shoring and Trailer

• Inspect the shoring before use.
Unloading Shoring

• Hook up chain of adequate length so as not to crowd lift or flexibility.
Shoring Installation

• Use the excavator/backhoe to install shoring.

• Naturally frozen soil is not a substitute for shoring.
Shoring Endplates

- Hydraulically expand shoring.
- Install endplates if required.
Entering the Excavation

- Secure the ladder
- Wear all Personal Protective Equipment.
Three Points of Contact

- Three points of contact on the ladder.
Sewer Connection Repair
Curb Stop

- Check the curb stop when excavating for a Sewer Connection.
Connection Failure

• A failure must be removed and new pipe added.
Damaged Pipe

• Check the pipe.
Cutting Pipe

- Cut out damaged section of pipe.
Cutting Fibre Pipe

- Cut Fibre Pipe with a hacksaw.
Cutting A/C Pipe

- Cut A/C with a tile cutters.
Stand Pipe

• The stand pipe is a vertical drop from the elbow to the main.
Remove Pipe

- After cutting, remove damaged section of pipe.
Block Pipe

- Prevent debris from entering the sewermain.
Check Pipe

• Check the connection pipe for more failures.
Clean Pipe

- Clean the ends of the existing pipe.
Connecting to Existing Pipe
Connecting Pipe

- If appropriate the bell end of the pipe can be used to connect the pipe.
Couplers

- A coupler can be used to connect the pipe.
Transition Coupler

• Transition coupler is used to connect different sized pipe.
Coupler Installation

• Install coupler on existing pipe first
Coupler Installation

• Install coupler on replacement pipe or coupler.
90°Bend

90° bends must not be used.
Correct Bends

- The 22.5° and 45° bends are the correct bends to use.
Connecting to the Sewer Main
Service Saddle

• A service saddle is used to connect the pipe to the main.
Service Saddle Gasket

- Place gasket on service saddle
Service Saddle on Pipe

• Set service saddle onto pipe
First Clamp

- Affix first clamp to the service saddle
Second Service Saddle

- Affix second clamp to service saddle
Service Saddle Installed

• Service saddle installed onto pipe
Installing a Section of Pipe
Measure Length

• Measure the length between existing pipe stubs.
Pipe Foundation

• Prepare pipe foundation.
Positive Grade

- Ensure the pipe has a positive grade.
Cutting Pipe

• Cut the required pipe length.
Insert Pipe into Elbow

• Insert the pipe into the elbow.
Connect New Pipe

• Connect the new pipe to the existing connection pipe with a coupler.
• The PVC nipple is between the coupler and the elbow.
Tighten the Clamps

• Tighten the clamps of the coupler.
Pipe Bedding

- The pipe will be bedded to the spring line, with sand.
Cover Pipe

• Cover pipe and compact.
General Backfill
Service Connections

• Cover services connection and mains with 150mm (6inch) of granular material
Non-shrink Backfill

- Non-shrink backfill shall be used beneath (concrete or paving stone), sidewalks or driveways
Backfilling Other Utilities

- Ensure utilities are backfilled according to the specifications.
Backfill Material

- Backfill material should conform to City of Saskatoon Standards.
Compactors

- Mechanical Methods of compaction are required.
Hydraulic Tamper

- The hydraulic tamper is an excavator attachment
Walk Behind Tamper

- Backfill in 150mm (6 inches) lifts.
Handheld Plate Tamper

• Backfill in 150mm (6 inches) lifts.
Bucket Tamping

- Bucket tamping will be avoided.
Finished Backfill

• Leave adequate room for asphalt or concrete as per the instructions.
Disinfectant Applicator

- Disinfect all tools after use.
Disinfecting

• Apply disinfectant solution.
Traffic Control Devices

• Before leaving the site any unnecessary traffic control devices will be removed
Site Restoration

• The applicable department will perform restoration of the site.
Thank You.
Are there any Questions?