MESSAGE FROM THE DIRECTOR

The Public Works Department under the authority of the amended Streets By-law 1481/77 has revised many of the processes pertaining to Street Cuts made in the Right-of-Way. This Street Cuts Manual in conjunction with, the Streets By-law and City of Winnipeg Standard Construction Specifications become the guiding documents to the making, maintenance and restoration of street cuts.

The goal of the new By-law amendments and the Street Cuts Manual is to make the process of working in the Right-of-Way more straightforward, less frustrating and easier to enforce while better protecting the public interest and safety, as well as minimizing disruptions. The Street Cuts Manual will be published to the City’s web page annually to assist those working in the Right-of-Way.

Jim Berezowsky,

Director of Public Works
MISSION STATEMENT

The management and effective restoration of excavations in the Right of Way, which ensures quality and continued use of our City’s street infrastructure to the satisfaction of our customer.

VISION STATEMENT

Our Vision is to continuously improve cut restoration management, achieve fewer disruptions within the Right-of-Way infrastructure and improve quality restoration services.

Published by:
The City of Winnipeg
Public Works Department
Engineering Division
106-1155 Pacific Avenue
Winnipeg, MB, Canada   R3E 3P1
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STREET CUTS MANUAL

The Street Cuts Manual has been prepared by the Public Works Department, Engineering Division to provide information and details on the process of restoring cuts in the City of Winnipeg Right-of-Way.

REGIONAL STREET CUTS

Public Works requires all street cut permit applicants or their agents to restore their own hard surface cuts made on Regional Streets no later than 72 hours after completion of any utility repair or installation activity. Cuts made November 1 – April 30 will have to be restored by June 15. Only contractors who are licensed under the Streets By-law and hold a valid Restoration Contractor’s License are permitted to restore hard surface cuts in the Right-of-Way.

STREETS BY-LAW 1481/77

The amended Streets By-law can be found on the following City of Winnipeg website: http://www.winnipeg.ca under City Hall, choose By-laws. Reference to the Streets By-law throughout the Street Cuts Manual is always By-law 1481/77.

DISCLAIMER

Information in this manual is intended to supplement the Streets By-law 1481/77 including all amending By-laws and the City of Winnipeg Standard Construction Specifications.
DEFINITIONS

“Designated employee” means the Director and any employee of the City to whom the Director has delegated authority to enforce or administer all or part of the By-law

“Manual of Temporary Traffic Control” means the Manual of Temporary Traffic Control in Work Areas on City Streets approved by Council from time to time and, unless otherwise specified, refers to the most recent edition; (Refer to Links page)

“Street” means any place part of which has been dedicated as a roadway, lane, footpath, walkway, according to The Real Property Act or which the public is ordinarily entitled to use for passage, with or without fee or charge therefore, and includes all the space between the boundary lines thereof

“Hard surface cut” means any cut, break, tear or excavation made on pavement, walks and/or curbs

“Street Cuts Manual” means the Street Cuts Manual issued by the Director under clause 4.12.02(1) of the Streets By-law and, unless otherwise specified, refers to the most recent edition of the Manual posted on the City of Winnipeg website (Refer to Links page)

“Standard Construction Specifications” means the Standard Construction Specifications for infrastructure work on City Streets approved by the Public Works Department and, unless otherwise specified, refers to the most recent edition at; (Refer to Links page)
“Capital Project” Any major Project on a Regional or Non-Regional Street managed and/or supervised by City of Winnipeg, in form of reconstruction or rehabilitation of the street or section of the street utilizing Provincial and Tax capital set aside by the council for the street upgrading per year.

“Emergency repair” is a repair necessary to prevent loss of life or property and to restore a pre-existing service when a service interruption occurs.
**LICENSING**

**LICENSE REQUIREMENTS**

**All Street Cuts**
Prior to making a street cut a person must hold a subsisting and applicable License issued under:
- the *Streets By-law*, or
- the *Private Access By-law*, or
- the *Water By-law* or the *Sewer By-law*, or
- is authorized by *Part 8* (Boulevard Maintenance) of the *Neighbourhood Livability By-law*

**Regional Street Cuts**
Prior to restoring Regional Street hard surface cuts the permit applicant or their agent must hold a subsisting and applicable *Streets By-law License* and a *Restoration Contractor’s License* issued under the *Streets By-law*.

**QUALIFICATIONS**

Prior to receiving a *Streets By-law License* and/or a *Restoration Contractor’s License* the applicant must:

- Satisfy the Director that they have the knowledge and the ability to meet the requirements of this *Street Cuts Manual*, the *Streets By-law* and other applicable by-laws including, the *Standard Construction Specifications* and the *Manual of Temporary Traffic Control*

- Provide evidence of a policy of commercial general liability insurance consistent with *Section 3.05* and *Section 6* of the *Streets By-law*
PERMITS AND APPROVALS

STREET CUT PERMITS

- No person shall cut, break, tear up or remove any road surface or make any excavation in, on, over or under a street for any purpose without first having obtained the appropriate Permit from the Director.

- The person responsible for making a street cut must make an application for a Street Cut Permit at least forty-eight (48) hours prior to the commencement of work with the exception of emergency repair work.

- For emergency repair, a permit is to be obtained within 48 hours from start of work or 24 hours after work is completed. Whichever is earliest out of both timeframes.

- Late fee will be charged if a Street Cut Permit has not been obtained prior to commencement of work.

- The applicant has the option to arrange for an inspection with the designated Area Cut Inspector prior to issuance of the permit to determine the restoration area.
• The permit repair fees for street cuts shall be sufficient to restore the pavement to its original condition

• The street pavement ratings and current capital program are available on Public Works Street Construction at the City of Winnipeg website (See Appendix “A” Guide to Map)

• As part of an application, the applicant must pay a Permit Administration Fee and one or more Street Cut Repair Fees established by Council from time to time. A Street Cut Repair Fee will be based on the size of the street cut or/and the condition of the street surface that, in the reasonable opinion of a designated employee, may be damaged or undermined by the street cut

• At the discretion of the designated employee a single permit can be issued for a location that has multiple cuts under planned utility work accompanied by approved underground drawing, providing the location does not exceed one (1) city block and the work is undertaken in a continuous manner

• Applicants have up to 14 calendar days to dispute any Add-to's with the area inspector

• Permit refunds will not include the cut permit administration fee

• The restoration process for multiple cuts related to Major Utilities Capital Projects must be approved by the Permits Administrator (Technologist III) and will require the applicant to enter into an agreement to contract out the restoration along with hiring a private consultant for engineering services
Permit Contact
Public Works Department
Customer Services Division
107-1155 Pacific Ave.
Winnipeg, MB, Canada R3E 3P1
204-986-3184
(Monday – Friday) 08:30 to 16:30

Regional Street Cut Permits – Securities Option

The Public Works Department accepts a “Standby - Letter of Credit”, in lieu of cash payment for all hard surface quantities on cut permits where the applicant is responsible for permanent restoration. The Standby Letter of Credit will be held as security and only used in the event the Permit Applicant did not satisfactorily restore the cuts made by the Permit Applicant. This will alleviate continuous refunding of permit restoration fees upon completion of the warranty. Note: A non-refundable Permit Administration Fee is still required. For additional information on the Letter of Credit program please contact;

Licensing Administration Contact
106-1155 Pacific Ave.
Winnipeg, MB, Canada R3E 3P1
204-794-4379

Submission and Approval of Drawings

- Prior to issuance of the permit, the applicant must submit drawings to Underground Structures and obtain approval before carrying out any Capital Project, installation or realignment of the utility infrastructure in, on, over or under a street
The drawings required must:
- be in a form acceptable to the designated employee
- include any information reasonably required by the designated employee in order to approve the drawings
- be submitted at least fourteen (14) days prior to the work

Where the work results in changes of alignment or grade or when requested by the designated employee to do so, the person carrying out the work must submit “record drawings” to the designated employee within sixty (60) days after the work has been completed.

Inquiries regarding Capital Projects should be directed to the Permits Administration Technologist III (See Contacts, page 20)

Underground Structures Contact
Public Works Department
Underground Structures Branch
107-1155 Pacific Ave.
Winnipeg, MB, Canada R3E 3P1
ugsapproval@winnipeg.ca
(Monday – Friday) 08:00 to 16:00

CONSTRUCTION

Excavation
- All excavations shall be done in accordance with Standard Construction Specification CW 2030 and CW 3230, CW 2160
• All pavements must be saw-cut full-depth in accordance with CW 3230

• Where the perimeter of a Hard Surface cut is within one (1) metre of a joint or the pavement edge, the area of the repair shall be extended to the pavement edge and add-to permit fees shall be paid to reflect this addition. Any curb which has to be replaced as a result of this extension will also be charged on the permit as an add-to

• All utility clearances are the responsibility of the permit applicant or their agent

**BACKFILL**

• Any cut made within 450mm of hard surface shall be backfilled with **Type 1** (pit-run) material. The compaction shall be a minimum of 95% of the Standard Proctor in maximum 300 mm thick layers in accordance with CW 2030 using vibratory compactor

    OR

Backfill any cut under Street Pavement, including approaches with **Cement-Stabilized Fill (CSF)** in accordance with CW 2030 and Table CW 2160.1 (See Appendix “D”), to a minimum of one (1) meter depth from the underside of the finished pavement unless an alternate class of backfill is authorized by the Director

• When CSF is used as a backfill, no pavement shall be placed until bleed water has been evaporated from the CSF surface or has been drained or removed from the surface. CSF isn’t permitted as a temporary driving surface.
• Any voids discovered in the excavation during the course of construction are to be filled with Flowable Cement-Stabilized Fill in accordance with CW 2030 and Table CW 2160.1 (See Appendix “D”)

• Type 1 material is to consist of well graded pit-run material in accordance with Table CW 2030.1 (See Appendix “C”)

BOULEVARD

Mechanical Compaction

• All boulevard cuts as Class 2 Backfill: Use Type 1 material, with a vibratory compactor in maximum 300mm layers to at least 95% of Standard Proctor Density, in accordance with CW 2030

• All boulevard cuts as Class 4 Backfill: Use suitable excavated material compacted by mechanical means in maximum 300mm layers to a density equivalent to that of the surrounding unexcavated material, in accordance with CW 2030

Jetting, Flooding and Tamping of Backfill

• All boulevard cuts made between and including May 15th and October 15th must be flood tamped immediately following backfilling operations in accordance with CW 2030

• All boulevard cuts made between and including October 16th (of the previous year) and May 14th (of the current
year) must be **flood tamped by June 15th** of the current year in accordance with CW 2030.

**Procedure**

1. Make arrangements for water supply source in accordance with Specification CW 1120.

2. Use a minimum 25 millimeter diameter rigid pipe of suitable length for jetting excavations.

3. Insert the jetting pipe into the backfill to within 1 meter of the top of the pipe allowing the water jetting action to determine the rate at which the jetting pipe is worked through the backfill.

4. Locate jetting insertions in accordance with SD-003.

5. Continue jetting until water rises above top surface of backfill and begins to pond.

6. Tamp backfill with a backhoe mounted vibratory plate compactor once surface water has sufficiently dried.

7. Place and compact additional specified backfill material to maintain top surface of backfill at required elevation.

**TEMPORARY SURFACE RESTORATION**

The permit applicant must ensure that the temporary restoration of all cuts associated with the permit are monitored and maintained at all times in a condition that is safe for which that portion of the street is reasonably expected to be used. This obligation continues until all cuts associated with the permit are permanently restored to the satisfaction of the Director.
If the Director is of the opinion that any temporary restoration has created a hazardous situation which can endanger the public or cause damage to a vehicle, the Director may:

- Notify the permit applicant of the unacceptable patches/trenches. Applicant is required to correct the hazard **within 3 hours** and provide a photo evidence OR
- Contact City forces to rectify the hazard

Note: Any costs incurred by the City for the maintenance of temporary restorations resulting from improper backfilling, workmanship, or compaction shall be added on to the permit.

**TEMPORARY RESTORATION - CAPPING MATERIALS**

**Regional Streets/ Non-Regional Streets/ Lanes/ Approaches/ Walks/ Medians**

- Temporary concrete (See Appendix “E”) over Cement-Stabilized Fill or,
- Minimum 75mm of hot mix asphalt over Cement-Stabilized Fill

**TEMPORARY RESTORATION – WINTER SEASON CAPPING**

**Sidewalks and Approaches Only**

- From November 1 to April 30, when hot mix asphalt is not in production, Cement-Stabilized Fill will be considered an acceptable temporary capping material for Sidewalks and Approaches. The CSF shall be in accordance with CW2160
(See Appendix “D”) and must meet the specified compressive strength of 1.5 - 2.5 MPa. The utility shall be independent and isolated from the surrounding temporary capping material.

**PERMANENT RESTORATION ON STREETS**

- All hard surface cuts on Regional Streets shall be restored by the applicant or their agent **no later than 72 hours**. The applicant can elect to self-restore any cut on Non-Regional Street by contacting the area inspector and requesting approval.

- A *Restoration Contractor’s License* as described in the City of Winnipeg *Street Cuts Manual* supplemental to the *Streets By-law* is required to permanently restore any hard surface cuts on Regional and Non-Regional Streets.

- All restorations shall be done in accordance with the City of Winnipeg *Standard Construction Specifications* and the *Street Cuts Manual*.

- All restorations on Regional Streets are to be restored using Early Opening (24hr) concrete (See Appendix “G”)

- All restorations around manholes and catch basins shall be separated by bond breaker and be done in accordance to Standard Details SD-220 A/B/C (See Appendix “O, P, & Q”). MTS and Manitoba Hydro manholes shall require a site meeting with the utility prior to restorations.

- Where the perimeter of a Regional Street cut is within one (1) meter of a joint or the pavement edge, the area of the repair shall be extended to the pavement edge and permit restoration fees shall be paid to reflect this addition. Any
curb which has to be replaced as a result of this extension will also be charged on the permit as an add-to

**REGIONAL STREET INSPECTION**

*Pre-Restoration Inspection*
If the applicant requires a pre-restoration inspection of the cut to determine the extents of the restored area, an Area Inspector may be contacted for assistance. See **Contacts** section for details.

*Restoration Inspection*
Inspection must be arranged with an Area Inspector prior to the final restoration of a street cut. If an applicant has failed to arrange an inspection, the applicant must either: demonstrate to the designated employee that the restoration meets the requirements (including compliance with the *Standard Construction Specification*) or remove restored surface and re-construct it at no cost to the City of Winnipeg within 14 days of request.

**WORKSITE PROTECTION**

It is the permit applicant’s responsibility for all work processes, safety and signing, until the cut has been permanently restored and approved and inspected by the Area Inspector.

Every excavation in a street shall proceed expeditiously and the permit holder shall not allow a street cut excavation to remain open, unless the work is actively in progress.

All work within the Right-of-Way must be controlled in accordance with the *Manual of Temporary Traffic Control*. (See Appendix “R”)

Vehicular and pedestrian traffic is to be maintained with the structural capacity to maintain safe passage, at any time of the day.
**Site Clean Up**
Upon completion of the temporary patch or permanent reinstatement of all cuts, all excess material must be removed from the area of the construction site and left in a safe, neat, and clean condition to the satisfaction of the Area Inspector.

**Protection of Trees**
The Contractor shall take precautionary steps as specified in Appendix “K” to prevent damage from construction activities to existing boulevard trees within the limits of the construction area. All damage to existing trees caused by the Contractor’s activities shall be repaired to the requirements of the City Forester or designate.
WARRANTY FOR REGIONAL STREET RESTORATION

Permanent Restoration by Applicant
The permit holder is responsible for the repairs undertaken by the contractor or their agents necessary to correct settlement or surface deterioration for a warranty period of one (1) year following the date of acceptance of permanent restoration.

Any cost incurred by the City for repairs during the warranty period resulting from improper backfilling, workmanship, or compaction shall be passed on to the permit holder.

REGIONAL LANE CLOSURES
The Contractor is subject to the Construction Agency responsibilities outlined in Section 2 of the Manual of Temporary Traffic Control. This includes, but is not limited to, the requirement to obtain approval from the Traffic Management Branch to work on Regional Streets.

If the restoration contractor is different than the cut contractor, the restoration contractor must contact the Traffic Management Branch to ensure that approval has been granted for the Regional Street lane closure.

WORK ON REGIONAL STREETS
When deemed necessary by the Director of Public Works, contractors doing work on Regional Streets are required to do all things necessary to expedite completion of the work. This includes all pavement restorations and is to be achieved through the use of;

- 24 hour work activities
- Weekend work activities
Steel plating of excavations during a.m. and/or p.m. peak rush hour periods

The cut contractor and/or restoration contractor are required to contact the Traffic Management Branch prior to commencing work to ensure the applicable guidelines are followed.

**Traffic Management Contact**
Public Works Department  
Transportation Division  
Traffic Management Branch  
101-1155 Pacific Ave.  
Winnipeg, MB, Canada   R3E 3P1  
PWDLaneClosures@winnipeg.ca  
(Monday-Friday) 08:30 to 16:30

**Regional Street Lane Closures Form**
Go to City of Winnipeg website @ [https://www.winnipeg.ca/](https://www.winnipeg.ca/) and select Departments > Public Works > Transportation > Road Construction & Lane Closures > [Request a Regional Street Lane Closure](https://www.winnipeg.ca/).
## Pavement Restoration Guidelines

### A) Asphalt & Asphalt over Concrete

<table>
<thead>
<tr>
<th>Rated Pavement Condition of Segment</th>
<th>Regional (Priority I)</th>
<th>Collector (Priority II)</th>
<th>Local (Priority III)</th>
</tr>
</thead>
<tbody>
<tr>
<td>New</td>
<td>Action Required</td>
<td>Action Required</td>
<td>Action Required</td>
</tr>
<tr>
<td></td>
<td>Responsibility</td>
<td>Responsibility</td>
<td>Responsibility</td>
</tr>
<tr>
<td>New</td>
<td>Grind &amp; Repave full lane width of project</td>
<td>Grind &amp; Repave full lane width of project</td>
<td>Grind &amp; Repave full lane width of project</td>
</tr>
<tr>
<td>Good</td>
<td>Utility conducting work</td>
<td>Utility conducting work</td>
<td>Utility conducting work</td>
</tr>
<tr>
<td>Fair</td>
<td>Decision after inspection by Public Works Department</td>
<td>Decision after inspection by Public Works Department</td>
<td>Decision after inspection by Public Works Department</td>
</tr>
<tr>
<td></td>
<td>See Note (A-2)</td>
<td>See Note (A-2)</td>
<td>See Note (A-2)</td>
</tr>
<tr>
<td>Poor</td>
<td>Isolated repairs accepted</td>
<td>Utility conducting work</td>
<td>Isolated repairs accepted</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Utility conducting work</td>
</tr>
</tbody>
</table>

**NOTES:**

(A-1) This table is only a guide. The actual extents of all pavement restorations are subject to pre-construction inspection, and final approval by the Public Works Department.

(A-2) Factors used by the Public Works to determine the extent of pavement restoration:

- Condition of surrounding pavement prior to start of project;
- Age of pavement;
- Classification of segment (e.g., arterial vs. collector);
- Planned work in the right-of-way (future streets projects);
- Length of project;
- Number of cuts project requires (e.g., one cut at each end vs. 15 in a row; 10m apart)

(A-3) In some cases where renewal work is warranted and/or Streets Maintenance is considering improvements in the current or following construction year – partnering with the Public Works Department may be possible. A pre-construction meeting with the Area Inspector is required to determine the extent of the work and amount payable by the Department.

(See Appendix “L & M” for example drawings)
Pavement Restoration Guidelines

B) Portland Cement Concrete

<table>
<thead>
<tr>
<th>Rated Pavement Condition of Segment</th>
<th>Regional (Priority I)</th>
<th>Collector (Priority II)</th>
<th>Local (Priority III)</th>
</tr>
</thead>
<tbody>
<tr>
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<td>Action Required</td>
<td>Responsibility</td>
<td>Action Required</td>
</tr>
<tr>
<td>New</td>
<td>Full panel repair</td>
<td>Utility conducting work</td>
<td>Full panel repair</td>
</tr>
</tbody>
</table>
| Good                               | Decision after inspection by Public Works Department  
See Note (B-2) | Decision after inspection by Public Works Department  
See Note (B-2) | Decision after inspection by Public Works Department  
See Note (B-2) | Decision after inspection by Public Works Department  
See Note (B-2) |
| Fair                               | Isolated repairs accepted | Utility conducting work | Isolated repairs accepted | Utility conducting work |
| Poor                               |                      |                         |                     |                          |

NOTES:

(B-1) This table is only a guide. The actual extents of all pavement restorations are subject to pre-construction inspection, and final approval by the Public Works Department.

(B-2) Factors used by the Public Works to determine the extent of pavement restoration:

(Generally, in order of importance, but not limited to):
- Condition of surrounding pavement prior to start of project;
- Age of pavement;
- Classification of segment (e.g. arterial vs. collector);
- Planned work in the right-of-way (future streets projects);
- Length of project;
- Number of cuts project requires (e.g. one cut at each end vs. 15 in a row; 10m apart)

(See Appendix “N” for example drawings)
CONTACTS

Licensing and Capital Projects
Permits Administration Technologist III…………………204-794-4379
Email: GaryCampbell@winnipeg.ca

Street Cut Permits
Permit Clerk…………………………………………………………204-986-3184
Email: pwdcpermits@winnipeg.ca

Senior Cut Inspector……………………………………………204-794-4354
Email: OTarasov@winnipeg.ca

East Area Cut Inspector………………………………………204-451-5871
Email: KBoles@winnipeg.ca

North Area Cut Inspector………………………………………204-794-4062
Email: TKrainert@winnipeg.ca

South Area Cut Inspector………………………………………204-391-3626
Email: RLim2@winnipeg.ca

General Inquiries
Customer Service……………………………………………………311

Underground Structures……………………ugsapproval@winnipeg.ca

Regional Street Lane Closures
Traffic Management Branch…….PWDLaneClosures@winnipeg.ca
APPENDIX “A” Maps Guide

Go to the City of Winnipeg home webpage: http://www.winnipeg.ca select Departments > Public Works > Maps > Street Conditions.

When Departments is selected, click Public works on left menu. appear with the address selected, click on the selected address.

Click on Maps on the left menu of the Public Works page and then click on Street Conditions under the Maps menu on the left side. The map will zoom in to the address location. On the Legend tab you will see an explanation of what each color represents with respect to Street Rating, New, Good, Fair, etc. Hover mouse over the selected street to view Street Condition and Surface Type.

Where it says Search by Address, enter the address. Hit enter or click on the magnifying glass symbol on the right of the address bar. A window will
APPENDIX "B"
Standard Trench and Excavation Backfill

1) Under Boulevard or Soft Surface Median

RESTORATION OF BOULEVARD OR
SOFT SURFACE MEDIAN

FINISHED GRADE

COMPACT TO 90% STANDARD
PROCTOR IN 300mm THICK
LAYERS OR JETTED, FLOODED
AND TAMPERED. REF. CW 2030

SUITABLE EXCAVATED
MATERIAL

COMPACT TO 95% STANDARD
PROCTOR

BEDDING AND INITIAL
BACKFILL. REF. SD-001

MATERIAL SHALL BE TYPE 2, 3
OR SAND. REF. TABLE 2030.1
IN CW 2030

NOTE: 1. RESTORATION TO MATCH EXISTING GRADES

THE CITY OF WINNIPEG
PUBLIC WORKS DEPARTMENT

Reference Spec. No.
CW 2030

STANDARD TRENCH AND EXCAVATION
BACKFILL UNDER BOULEVARD OR
SOFT SURFACE MEDIAN

DIMENSIONS ARE IN MILLIMETRES

<table>
<thead>
<tr>
<th>Designed By:</th>
<th>Drawn By: M.B.P.</th>
<th>Scale: N.T.S.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Checked By:</td>
<td>Date: 13-02-05</td>
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</table>

23
APPENDIX “B”
Standard Trench and Excavation Backfill

2) Under Street Pavement

NOTE: 1. RESTORE STREET PAVEMENT IN ACCORDANCE WITH CW 3230
APPENDIX “B”
Standard Trench and Excavation Backfill

3) Under Miscellaneous Concrete Slabs, Paving Stones or Asphalt Hard Surface

NOTE: 1. RESTORE MISCELLANEOUS CONCRETE SLABS IN ACCORDANCE WITH CW 3235
2. RESTORE PRECAST CONCRETE PAVING STONES IN ACCORDANCE WITH CW 3330 OR CW 3335
3. RESTORE ASPHALT HARD SURFACE IN ACCORDANCE WITH CW 3410
4. MISCELLANEOUS CONCRETE SLABS ARE SIDEWALKS, MEDIAN SLABS, BULLNOSES OR OTHER CONCRETE SLABS THAT ARE NOT STREET PAVEMENT

THE CITY OF WINNIPEG
PUBLIC WORKS DEPARTMENT

Reference Spec. No.
CW 2030, CW 3235, CW 3330, CW 3335, CW 3410

DIMENSIONS ARE IN MILLIMETRES

STANDARD TRENCH AND EXCAVATION BACKFILL UNDER MISCELLANEOUS CONCRETE SLABS, PAVING STONES OR ASPHALT HARD SURFACE

Designed By: Drawn By: Scale:
M.B.P. N.T.S.
Checked By: Date: 13-02-05
G.C. Drawing No.
Approved:
## Grading Requirements for Imported Backfill

### Table CW 2030.1

<table>
<thead>
<tr>
<th>Canadian Metric Sieve Size</th>
<th>Percent of Total Dry Weight Passing Each Sieve</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Type 1 Material</td>
</tr>
<tr>
<td>75 000</td>
<td>90% - 100%</td>
</tr>
<tr>
<td>28 000</td>
<td>80% - 100%</td>
</tr>
<tr>
<td>20 000</td>
<td>100%</td>
</tr>
<tr>
<td>10 000</td>
<td></td>
</tr>
<tr>
<td>5 000</td>
<td>40% - 80%</td>
</tr>
<tr>
<td>2 500</td>
<td></td>
</tr>
<tr>
<td>630</td>
<td></td>
</tr>
<tr>
<td>315</td>
<td>10% - 35%</td>
</tr>
<tr>
<td>80</td>
<td>5% - 30%</td>
</tr>
</tbody>
</table>

**NOTE:**
- Type 1 Material – well graded pit-run
- Type 2 Material, Type 3 Material and Sand – bedding and initial materials
# APPENDIX “D”
Design Requirements for Concrete Used for Underground Structures

<table>
<thead>
<tr>
<th>Type of Structure or Use</th>
<th>Maximum Size of Aggregate (mm)</th>
<th>Cement Type</th>
<th>Maximum Water Cementing Materials Ratio</th>
<th>Compressive Strength at 28 days</th>
<th>slump flow</th>
<th>Air Content</th>
<th>Minimum Cementing Materials Content</th>
<th>As Required to Meet Specified Compressive Strength</th>
</tr>
</thead>
<tbody>
<tr>
<td>C) Cement-Stabilized Fill</td>
<td>20</td>
<td>Type GU</td>
<td>Not Applicable</td>
<td>1.5 to 2.5 Mpa</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D) Flowable Cement-Stabilized Fill</td>
<td>5</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>
APPENDIX “E”
Concrete for Temporary Restoration of Utility Street Cuts

CW3310 Clause 6.6 (Capping Material)
The concrete supplier shall provide a mix design to be utilized for the temporary restoration of utility street cuts. The concrete shall be capable of supporting vehicular traffic loading within 24 hours of placement. The mix design requirements are as follows:

i. Minimum cement content = 300 kg/m$^3$
ii. Slump = 120 +/- 20mm
iii. Air Content = 5% to 8%
iv. Aggregate Size = 20mm

The grading for the concrete aggregate shall comply with the limits for Type 1 mix shown in Table 1 CW 3310-R6.1 in section 5.3.1. A calcium chloride based admixture meeting the requirements of ASTM C494 shall be used in the concrete mix to ensure adequate early age strengths are achieved.

The admixture dosage shall be adjusted during the year to accommodate changes in air temperatures. The admixture dosage will be dependent upon the Environment Canada minimum forecast temperature during 24 hour period after concrete placement and as follows:

<table>
<thead>
<tr>
<th>Minimum Curing Temperature after Concrete Placement</th>
<th>Calcium Chloride (based upon mass of cement)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greater than 0° C</td>
<td>1%</td>
</tr>
<tr>
<td>0 to -5° C</td>
<td>2%</td>
</tr>
<tr>
<td>Less than -5 to -10° C</td>
<td>3%</td>
</tr>
<tr>
<td>Less than -10° C</td>
<td>4%</td>
</tr>
</tbody>
</table>

The Mix Design Statement for this concrete shall be submitted to the City of Winnipeg, Research and Standards Engineer for approval in accordance with Clause 6.1 of this specification.
APPENDIX “F”
Full Depth Patches: Details of Moving and Tied Joints

SD-213B

450 LONG DOWELS TO BE BONDED INTO EXISTING CONCRETE AND LUBRICATED WITH ASPHALTIC CUT-BACK:
19.1mm @ 650 O.C. FOR PAVEMENTS D ≤ 200
28.6mm @ 900 O.C. FOR PAVEMENTS D > 200

SAWN JOINT REF. SD-212
SAW CUT FULL-DEPTH AND REMOVE OLD CONCRETE

EXISTING CONCRETE

NEW CONCRETE

TRANSVERSE (MOVING) JOINT

600 LONG TIE BARS
- 20M @ 900 O.C. ALONG LONGITUDINAL EDGES
- ALONG TRANSVERSE EDGES
- 2M @ 450 O.C. FOR PAVEMENTS D ≤ 200
- 2SM @ 450 O.C. FOR PAVEMENTS D > 200

BUTT JOINT REF. SD-212
SAW CUT FULL-DEPTH AND REMOVE OLD CONCRETE
EXISTING CONCRETE

NEW CONCRETE

TIED JOINT

230 FOR 20M TIE BARS
160 FOR 25M TIE BARS

DIMENSIONS ARE IN MILLIMETRES
The Concrete Supplier shall modify the mix design, as required, in order to ensure that the minimum compressive strength of the concrete pavement is 20 MPa and is achieved within the following early opening requirement:

- 24 hours early opening after placement (Regional)
- 72 hours early opening after placement (Non-Regional)

The Mix Design Statements for this concrete shall be submitted to the City of Winnipeg, Research and Standards Engineer for approval in accordance with Clause 6.1 of this specification.

The requirements of Clause 6.2 shall also apply to concrete for early opening pavement.
APPENDIX “H”
Concrete Strength and Workability

CW 3310 Clause 6.2

In accordance with CSA A23.1, Alternative (1) for specifying concrete, the concrete mix shall be proportioned such as to yield concrete having the required strength and workability, as follows:

a) Type 1 – Concrete for Pavements, Commercial Approaches, Curb and Gutter Sections, Curbs, Monolithic Curb and Sidewalks, Splash Strips and Bull-noses:

   i. Class of Exposure: C-2
   ii. Minimum Specified Compressive Strength @ 28 days = 32 MPa
   iii. Minimum Cement Content = 340 kg/m$^3$
   iv. Maximum Water/Cement Ratio = 0.45
   v. Slump = 50 +/- 20mm (for slip form paving)
       = 70 +/- 20mm (for hand placement)
   vi. Aggregate Size = 20mm Nominal
   vii. Air Content = 5.0% to 8.0%

b) Type 2 – Concrete for Sidewalks, Residential Approaches, Median Slabs and Other Related Concrete Works:

   i. Minimum Specified Compressive Strength @ 28 days = 30 MPa
   ii. Minimum Cement Content = 300 kg/m$^3$
   iii. Maximum Water/Cement Ratio = 0.49
   iv. Slump = 80 +/- 20mm
   v. Aggregate Size = 20mm Nominal
   vi. Air Content = 5% to 8%
APPENDIX “I”
Placing Asphaltic Concrete Paving Mixture

CW 3410 Clause 9.2-9.3

The mixture shall be delivered to the job and placed at a temperature optimum for proper compaction, taking into consideration the weather conditions, the temperature of the surface on which the mixture is to be placed, and the thickness of the lift. In no case shall the mixture be placed at a temperature of less than 125°C nor greater than 155°C.

Pavers shall be capable of spreading the mixture, without segregation, in thicknesses of not less than 25 mm and not more than 75 mm. Placement widths shall vary from a minimum of 1.5 metres to a maximum of 4.5 metres unless approved by the Contract Administrator. They shall be equipped with blending or joint leveling devices for smoothing and adjusting all longitudinal joints between strips or courses of the same thickness. Pavers shall be equipped with screeds.

Where the thickness of the mixture exceeds 75 mm, the mixture shall be placed in two layers. The leveling course shall be placed such that the final layer or surface course is of uniform thickness and of minimum thickness of 40 mm. Asphalt material shall be removed from curb inlet grates to ensure a minimum 100 mm vertical opening in the curb inlet grate.

Hand placed asphalt materials shall be spread and compacted to match the finished grade to the satisfaction of the Contract Administrator. The Contractor shall ensure that the amount of material delivered to the site is placed within the placement temperatures.
After final rolling the surface of each course shall be smooth and true to the established crown and grade. Any low or defective spots shall immediately be remedied by cutting out the course, or planing to a depth of 40 mm, at such spots and replacing it with a fresh hot mixture that shall be immediately compacted to conform with the surrounding area and shall be thoroughly bonded to it. The surface of the finished pavement shall be free from depressions exceeding 5 mm as measured with a three (3) metre straight edge.
APPENDIX “K”
Protection of Trees

• The Contractor shall not stockpile materials and soil or park vehicles and equipment on boulevards within two (2) metres of trees.
• Trees identified to be at risk by the Contract Administrator are to be strapped with 25 x 100 x 2400mm wood planks, or suitably protected as approved by the Contract Administrator.
• Excavation shall be performed in a manner that minimizes damage to the existing root systems. Where possible, excavation shall be carried out such that the edge of the excavation shall be a minimum of 1.5 times the diameter (measured in inches), with the outcome read in feet, from the closest edge of the trunk. Where roots must be cut to facilitate excavation, they shall be pruned neatly at the face of excavation.
• Operation of equipment within the dripline of the trees shall be kept to the minimum required to perform the work required. Equipment shall not be parked, repaired, refueled; construction materials shall not be stored, and earth materials shall not be stockpiled within the driplines of trees. The dripline of a tree shall be considered to be the ground surface directly beneath the tips of its outermost branches. The Contractor shall ensure that the operations do not cause flooding or sediment deposition on areas where trees are located.
• Work on-site shall be carried out in such a manner so as to minimize damage to existing tree branches. Where damage to branches does occur, they shall be neatly pruned.
FAIR/POOR PAVEMENT RATING
INSPECTORS DECISION/ISOLATED REPAIR

NEW/GOOD PAVEMENT RATING
GRIND & REPAVE FULL LANE WIDTH

EXCAVATION AREA
ADDITIONAL RESTORATION AREA

THE CITY OF WINNIPEG
PUBLIC WORKS DEPARTMENT
ASPHALT & ASPHALT OVER CONCRETE
PRIORITY I & II
APPENDIX “O”
Catch basin and Manhole Isolation Detail (New Pavements)
SD-220A

THE CITY OF WINNIPEG
PUBLIC WORKS DEPARTMENT

CATCHBASIN AND MANHOLE ISOLATION DETAIL (NEW PAVEMENTS)

Designated By: L.S.W.L./K.T.  Drawn By: A.R.
Checked By: D.R.K.  Date: 03-01-31
Approved: SURFACE WORKS COMMITTEE

Scale: N.T.S.

Drawing No. SD-220A
APPENDIX “P”
Manhole Isolation Detail in Existing Pavements

SD-220B

THE CITY OF WINNIPEG
PUBLIC WORKS DEPARTMENT

Reference Spec. No.
CW 3230, CW3210

MANHOLE ISOLATION DETAIL IN EXISTING PAVEMENTS

DIMENSIONS ARE IN MILLIMETRES

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<th>Drawn By:</th>
<th>Scale</th>
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<td>A.R.</td>
<td>N.T.S.</td>
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<td>D.R.K.</td>
<td>05-12-31</td>
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<td>SURFACE WORKS COMMITTEE</td>
<td>SD-220B</td>
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</table>
APPENDIX “Q”
Curb and Gutter Inlet Isolation Detail

SD-220C

NOTE

1) BAR MAT REINFORCEMENT, DOWELS AND TIE BARS NOT SHOWN.

2) BAR MAT REINFORCEMENT, DOWELS AND TIE BARS TO BE 100 mm TYP. FROM BUTT JOINT.

OUTSIDE DIAMETER OF CONCRETE RISER
REF. SD-025
SD-024

THE CITY OF WINNIPEG
PUBLIC WORKS DEPARTMENT

Reference Spec. No.
CW 3205, CW 3210, CW 3310

CURB AND GUTTER INLET ISOLATION DETAIL

DIMENSIONS ARE IN MILLIMETRES

Designed By: L.S.W.L / K.T.

Drawn By: T.G.A.

Check: B.P.

Date: 08-12-15

N.T.S.

SD-220C

SIGNED

SURFACE WORKS COMMITTEE
APPENDIX “R”
Temporary Traffic Control

The Manual of Temporary Traffic Control provides temporary traffic control requirements for three work duration categories:

- Long Term;
- Short Term; and
- Mobile / Very short term

**Long Term Work Zones** are required if the closure exceeds 2 hours. The diagrams for long term sign set ups and proper lane closures can be shown in *Figures 1 through 31 in Section 5.04 of the Manual of Temporary Traffic Control.*

**Short Term Work Zones** are required for a period greater than 30 minutes but less than 2 hours. A modified signing approach is acceptable for this type of closure and can be shown in *Figures 32a through 38 in Section 5.04 of the Manual of Temporary Traffic Control.*

**Mobile and Very Short Duration Work Zones** are described as work zones that move continuously or intermittently, stopping at a fixed location for up to 30 minutes. Therefore, flashing beacons, arrow boards, variable message signs, and buffer vehicles are to be used to provide adequate traffic control, minimize exposure of workers to traffic and ensure that work is completed in a timely manner. Setups described in *Section 5.04 Figure 39,* can be used for mobile and very short duration work zones found in the *Manual of Temporary Traffic Control.*

*NOTE:* Short term lane closure may not be used at night during hours of darkness without written consent from the Traffic Management Branch (204) 986-5640 or email PWDLaneClosures@winnipeg.ca). Use of a flashing or sequential arrow traffic control device is required for any work at night. Closures that do not meet the above noted guidelines must be signed as a long term work zone.
The City of Winnipeg’s *Streets By-Law No. 1481/77*; available: [http://clkapps.winnipeg.ca/dmis/docext/bl_default.asp?documenttypeid=1](http://clkapps.winnipeg.ca/dmis/docext/bl_default.asp?documenttypeid=1)

List of City of Winnipeg’s Regional Streets available under *Streets By-Law No. 1481/77*


The City of Winnipeg’s *Standard Construction Specifications* (Includes Concrete Mix Design Approval); available in Adobe Acrobat (pdf) format: [http://www.winnipeg.ca/matmgt/Spec/Default.stm](http://www.winnipeg.ca/matmgt/Spec/Default.stm)
