



## ENGINEERING DEPARTMENT

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### [City of Winona – R.O.W. Concrete Replacement Specifications](#)

The following specifications apply to all concrete improvements with the Public Right of Way within the City of Winona, MN jurisdictional limits. These types of improvements include but are not limited to public and private sidewalks, driveway aprons, curb & gutter, carriage walks, and concrete boulevards.

#### [Permitting & Licensing](#)

Concrete permits from the Engineering office are required BEFORE you begin any work in the City's right of way. Failing to obtain permits has caused problems for this office and for the property owners who hired you. Please make sure you take out separate permits for each address.

Do not assume you have a permit. If you are unsure, call to find out. The permit is a permanent record to benefit the City of Winona, the property owners, and the contractor who did the work. Permits are VITAL to the smooth operation of the sidewalk replacement program. Failure to obtain required permits is a direct violation of City code and may be cause for penalty. There is a charge for concrete permits. The permits you receive from the Inspections Department do NOT cover any work done in the Right of Way.

#### [Safety](#)

Barricades and lights must be used at each construction site: Pursuant to City Code 25.14 (f) Storage of Equipment and Materials, Guards and Lights, Restoration of Streets shall keep and maintain in good order proper barricades by day and by night at all material, machinery and appliances locations and at the sites of all unfinished work to prevent injury or accident and shall replace and restore the street and its grass plots which may be disturbed in the doing of such work to as good of condition as it was prior to construction activity. When a location or site is insufficiently lighted at night by other means, the licensee shall provide adequate lighting. All rules and regulations of the city pertaining to the construction shall apply.

## Concrete Improvement Types & Thickness

All concrete surface improvements shall match the type and thickness for their purpose and shall have a uniform cross section and thickness throughout the entire area of the pour.

Sidewalk crack filling, grinding, slab lifting & filling are NOT acceptable methods of sidewalk repair.

Mud jacking is an acceptable repair method.

### *Sidewalks*

To be in compliance with ADA rules, all sidewalks must be constructed with a minimum width of five (5) feet. Please make sure the sidewalks you construct meet this requirement for handicap accessibility.

Four (4) foot wide sidewalks are no longer allowed. All sidewalks in a city block are required to be the same width.

Sidewalks that are not within a driveway are to be a minimum of 4-inches in thickness.

Sidewalks within a residential driveway are to be a minimum of 6-inches in thickness.

Sidewalks within a commercial driveway or alley are to be a minimum of 8-inches in thickness.

### *Driveways*

Residential driveways are to be a minimum of 6-inches in thickness.

Commercial driveways are to be a minimum of 8-inches in thickness.

Alleys are to be a minimum of 8-inches in thickness.

### *Curb & Gutter*

Curb & Gutter is to match the type and thickness of adjacent curb.

All curb & gutter is to be pinned or doweled into the existing curb adjoining the new work using three No. 6 epoxy coated pieces of rebar that are a minimum of 18-inches in length. Two rebar dowels should be drilled into the pan of the curb and one into the head.

## Excavation & Preparation

### *Dump Site*

The licensee shall dispose of removals at a site arranged for and secured at their discretion. The licensee shall assume full responsibility for acceptable disposition of the material as well as for any damages resulting from his disposal operations. All removals must be disposed of the day of removal and must not remain overnight. As soon as removal work begins, the area must be protected from pedestrians.

### *Sub-base & Base Preparation*

The site shall be excavated to a depth of 4-inches below the bottom of new concrete being placed at the location. The sub-base shall be prepared and compacted level and evenly to allow for a minimum of 4-inches of compacted Class-5 aggregate base material to be placed under the new work. This aggregate base material should be procured from a reputable source and shall be free of deleterious or adjunct materials, such as glass, brick, asphalt, plastic, wood, or other objectionable materials. Recycled concrete aggregates are allowed in base construction but must conform to MNDOT Specification 2211 Aggregate base and follow gradation requirements for Class-5 Aggregate Material in tables 3138.2-3, 3138.2-4, and 3138.2-5.

### *Street Patching*

Excavation of a portion of the street may be required by you when doing driveway approaches or curb & gutter authorized by the property owner. If excavation is required in completing your job, you should be aware of the proper procedure for patching the excavation: Pursuant to City code 25.20 (j) Refilling and Restoring Pavement in refilling the excavation all earth must be laid in layers not more than six inches in depth, and each layer must be thoroughly compacted to prevent after-settlement. Every excavation in the portion of a street or highway used for vehicular traffic shall be surfaced level with adjacent area of the street or highway with 4-inches of asphalt patching materials directly under which shall be 4 inches of crushed rock. The paving, curbing, flagging and sidewalks must be restored to as good condition as before the excavation and all broken or injured brick or stone must be replaced by new. All rubbish and surplus earth must be immediately removed.

### Formwork & Inspection

Forms shall have a height equal to the edge thickness of the walk and shall be sufficiently rigid to withstand the operations of placing and finishing the concrete.

All forms shall be set true to alignment and grade and shall be substantially staked and braced. When tested with a 10-foot straightedge, the tops of the forms shall not show a variation of over 1/8" from a straight line, and the sides of straight forms shall not show a variation of more than 1/4" from a straight line. Sections of straight forms not over 10 feet long may be used for curves having radii of 150 feet or more. Wood forms shall be oiled with a light, clear commercial paraffin oil.

All of Concrete Permits are Inspected at the time of form construction prior to concrete being placed, there will be no exceptions to this policy unless otherwise authorized by the City Engineer or Inspectors.

### Concrete Mixes

#### *Ready mix*

The concrete used shall meet the requirements of the most recent version of the MnDOT Standard Specifications for Construction. For concrete placed by hand use MnDOT mix 3F52, for concrete placed by slip form machine use MnDOT mix 3F32 or approved equal.

#### *Job mix & pre-manufactured bag mix*

On-site job mixed concrete and premanufactured bag mix concrete products are NOT allowed for use in concrete surface improvements within the R.O.W.

#### *Strength of concrete*

Concrete for sidewalk and/or curb and gutter construction when tested by the American Society for Testing Materials Standard Method C39 or as revised shall have a minimum compressive strength of 4,500 pounds per square inch at 28 days after molding of sample.

### Jointing & Finishing

Where practicable, all joints shall align with joints in adjoining work.

Joints shall be used to outline all panels in the walk that shall, so far as possible, be square. The lengths of the panels will be as shown in the plans. However, no panel shall have a surface area exceeding 36 square feet.

All joints shall be edged with an approved edging tool. The maximum round is  $\frac{1}{2}$ " or sawed joints are preferred.

Transverse joints shall be straight and shall be perpendicular to the centerline and to the surface of the walk. Longitudinal joints shall be parallel to the centerline and perpendicular to the surface of the walk.

Expansion joints shall be formed to the full thickness of the walk, and shall be of preformed materials. Expansion joints shall be placed between the walk and any abutting masonry or concrete. Transverse expansion joints shall be placed at uniform intervals of not more than 50 feet. The expansion joints shall be of non-extruding material (flexcell or equal).

Contraction joints shall be not more than 1/8" in width and shall be cut to a depth of not less than 1/3 of the thickness of the walk.

Concrete shall have a broomed finish perpendicular to the direction of travel for traction.

### Curing

The curb and gutter, sidewalks, and driveways shall be cured with a white colored AMS membrane curing compound in accordance with MnDOT Section 3754 or approved equal.

### Cold Weather

When the ambient air temperatures are anticipated to be at or below 36 degrees Fahrenheit within 72 hours of placing concrete a cold weather protection plan must be submitted at the time of obtaining a permit.

### Standard Specifications and Drawings

A copy of MnDOT's Standard Specifications [2521 \(Walks\)](#), [2531 \(Concrete Curbing\)](#) and [Pedestrian Curb Ramp](#) is available for your reference. These are the guidelines used for concrete construction in the City. Attached are drawings of [Concrete Driveway and Sidewalk Details](#), [Pedestrian Curb Ramp Details](#), and [Typical Curb and Gutter Sections \(B, V\) and \(D, S, R\)](#). We would like to point out some of the more important details in the specifications:

1. The maximum slump allowed is three (3) inches for curb and gutter, and five (5) inches for flatwork.
2. Contraction joints have to be at least one-third (1/3) the depth of the slab.
3. Flat work in the City right-of-way must have a broom finish for traction.
4. A white curing compound must be used with coverage as directed by the manufacturer.