

## Office of the City Engineer

City Hall  
730 Washington Avenue  
Racine, Wisconsin 53403  
262.636.9121 – Public Works  
262.636.9191 – Engineering



John C. Rooney, P.E.  
Commissioner of Public Works

Thomas M. Eeg, P.E.  
Asst. Comm. of Public Works/Operations  
Asst. Comm. of Public Works/City Engineer

TO: Utility Companies, Contractors, etc.

SUBJECT: Street Restoration Specifications

The attached 2017 Revised Specifications for Street Restoration are intended to outline the minimum acceptable street restoration work necessary to meet the needs of the City of Racine and the traveling public. It is a combination of restoration procedures that the City has developed throughout the years, and indicates the restoration requirements that the City has experienced to be most acceptable under normal circumstances.

These Revised Specifications for Street Restoration have incorporated all previous amendments and shall hereby be considered to be the only acceptable street restoration procedure.

In certain cases where a deviation from the above specifications appears constructive and in the best interest of the City, a written request for special consideration must be submitted to the Commissioner of Public Works, fully outlining the alternate proposal, prior to beginning work on the variation. Deviations from these instructions will be considered separately and approval of an alternate restoration procedure shall not be construed to indicate an amendment to these instructions.

An amendment signed and dated by the Commissioner of Public Works shall become a part of street restoration instructions.

*John C. Rooney*

Commissioner of Public Works/City Engineer

JCR:njp

# 2017 Revised Street Restoration Specifications

City of Racine, WI

## Table of Contents

<u>Title</u>	<u>Page</u>
Section A – Replacement of Pavement .....	1, 2, 3
Replacement of Pavement (Limits) .....	4, 5, 6, 7
Section B – Sidewalk, Driveway and Curb and Gutter Replacement .....	8, 9, 10, 11
Full Width Sidewalk Replacement .....	12
Integral Curb and Sidewalk Replacement .....	13, 14, 15
Ramp Surface Texturing .....	16
Section C – Protective Surface Treatment for Sidewalks and Pedestrian Ramps .....	17, 18
Section D – Curing Concrete, Joint Sealing and Cold Weather Paving .....	19
Section E – Placing and Reporting of Steel Plates in Streets .....	20
Section F – Lawn Replacement .....	21, 22
Section G – Backfilling .....	23
Section H – Control Box Placement .....	24
Section I – Request for Deviation from Specifications .....	25
Section J – City of Racine Street Map .....	26
Concrete Base Patching .....	27



## SECTION "A"

### REPLACEMENT OF PAVEMENT

#### 1. Definitions

"State Specification" when used herein shall mean the State of Wisconsin Standard Specifications for Road and Bridge Construction, 2009 Edition.

##### a. Warranty

All pavements shall be warranted for a period of three (3) years.

#### 2. Type "A" Pavement Replacement

When Type "A" pavement replacement is called for (on the plans), it shall consist of a one-course air-entrained Class "C" Portland cement concrete base pavement of a thickness of nine (9) inches, and containing eight (8) bags of cement per cu. yd. unless otherwise approved by the Commissioner of Public Works, and one and one-half (1 ½) inch asphaltic concrete surface, the latter conforming to the following standards:

- a. Aggregate -- The aggregate used shall conform to Section 460.2.2 of the State Specifications.
- b. Aggregate Gradation -- The aggregate gradation shall conform to Section 460.2.2.3 of the State Specifications. Gradation No. 9.5 mm shall be used for the surface source.
- c. Asphaltic Material -- The asphaltic materials used shall conform to Superpave Type E-0.3 for residential streets and Type E-3 for arterial and collector streets.
- d. Mixing -- The material shall be plant-mixed and furnished hot to the job site at a temperature not lower than 225° F. for binder courses and not lower than 250° F for surface courses.
- e. Compaction -- All asphaltic concrete shall be compacted in accordance with the State Specifications. Any variation to these Specifications must be approved by the Commissioner of Public Works.
- f. Tack Coat -- The concrete base shall be cleaned and a tack coat of Type SS-1 asphalt emulsion, applied at a rate of 0.08 to 0.12 gallons per square yard, shall be applied in accordance with Section 455.2.4.3 of the State Specifications before the surface course is placed. When the trench is adjacent to the asphalt covered gutter line, all blacktop shall be removed from the gutter area; the gutter area shall be cleaned and primed in the same manner as the adjacent base; the surface course shall extend to the face of the curb; the joint between the face of curb and the asphaltic concrete surface course shall be sealed with tack coat

material.

3. **Type "B" Pavement Replacement**

When Type "B" pavement replacement is called for (on the plans), it shall be a one-course air-entrained Class "C" Portland cement concrete pavement with a thickness matching the existing adjacent pavement, and contain eight (8) bags of cement per cubic yard. Trench work through Portland cement concrete that is ten (10) years old or newer must be replaced by removing entire slabs and replacing same with monolithic slab. Special consideration of circumstances should be discussed with the Commissioner of Public Works.

4. **Type "C" Pavement Replacement**

When Type "C" pavement replacement is called for (on the plans), it shall consist of a three (3) inch thick asphaltic concrete pavement placed on a six (6) inch crushed aggregate base course.

- a. **Asphaltic Concrete Pavement** -- The asphaltic concrete pavement shall conform to the requirements included for Type "A" pavement replacement and be made up of a two (2) inch thick binder course and one (1) inch thick surface course. The aggregate for the binder course shall conform to Gradation No. 19.0 mm of Section 460.2.2.3 in the State Specifications.
- b. **Base Aggregate Dense  $\frac{3}{4}$  - Inch** -- The crushed stone base shall be six (6) inches of three-fourths ( $\frac{3}{4}$ ) inch graded crushed stone in conformance to the requirements of Section 305.2.2.1 of the State Specifications.

5. **Type "D" Pavement Replacement**

When Type "D" pavement replacement is called for (on the plans), it shall consist of a three (3) inch thick asphaltic concrete pavement placed on the crushed aggregate base course described above.

- a. **Asphaltic Concrete Pavement** -- The asphaltic concrete pavement shall be one-course conforming to the requirements included for Type "A" pavement replacement except that the aggregate shall be Gradation No. 19.0 mm per Section 460.2.2.3 of the State Specifications.

6. **Type "E" Pavement Replacement**

When Type "E" pavement replacement is called for (on the plans), the top nine (9) inches of the trench shall be replaced as follows: The first six (6) inches shall be filled with Gradation No. 31.5 mm crushed stone in conformance with Section 305.2.2.1 of the State Specifications, and the remaining three (3) inches shall be filled with Gradation No. 19.0 mm crushed road gravel in conformance with Section 305.2.2.1 of the State Specifications.

Asphalt Type MC-30 (at the rate of 0.25 gallons per square yard) shall be applied

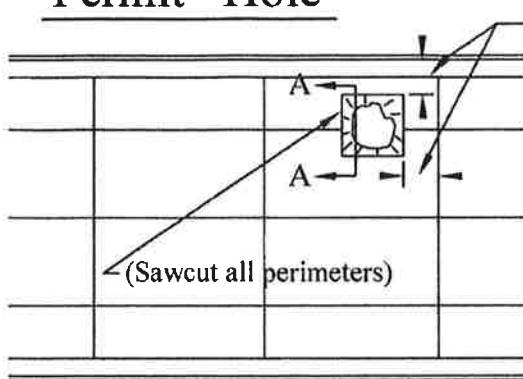
immediately thereafter, conforming to Section 455.2.4.2. of the State Specifications.

7. **Type "F" Pavement Replacement**

When Type "F" pavement replacement is called for (on the plans), it shall consist of a one-course air-entrained Class "C" Portland Cement concrete base pavement of a thickness of six (6) inches, and contain eight (8) bags of cement per cubic yard unless otherwise specified by the Commissioner of Public Works, a one-quarter (1/4) inch thick leveling sand before existing bricks are salvaged, replaced and vibrated. The existing brick pavers shall be laid in pattern to match existing condition. The pavers shall be laid "hand tight" in such a manner that the desired pattern is maintained and joints do not exceed one-sixteenth (1/16) inch. Vibrate salvaged brick pavers to their final level by 2 or 3 passes of vibrating plate compactor. After first vibration, sand shall be brushed over the surface and vibrated into joints with additional passes of plate compactor.

# REPLACEMENT OF PAVEMENT

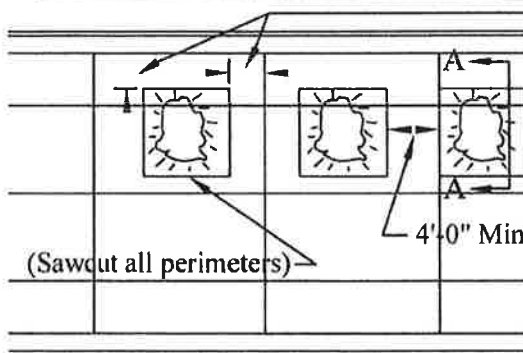
## Permit Hole



4'-0" Minimum to joint, gutter, or pavement edge.

1. If sawcut edge of hole is less than 4'-0" from joint, pavement shall be removed to joint.
2. Holes through Portland Cement Concrete pavement ten (10) or less years old shall be replaced by removing entire slabs and replacing same with a monolithic slab. Special Considerations should be discussed with the Commissioner of Public Works.
3. See sections on pages 4 and 5.

## Series of Excavations

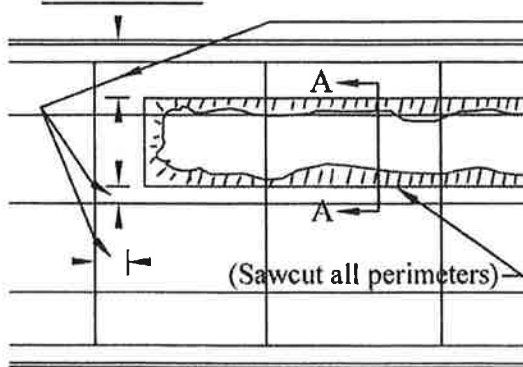


4'-0" Minimum to joint, gutter, or pavement edge.

4'-0" Minimum

1. If sawcut edges less than 4'-0" apart, or area between is damaged when greater than 4'-0", all pavement shall be removed and replaced as a longitudinal trench.
2. See sections on pages 4 and 5.

## Trench



4'-0" Minimum to joint, gutter, or pavement edge.

1. See sections on pages 4 and 5.

Width of replacement for longitudinal trenches.

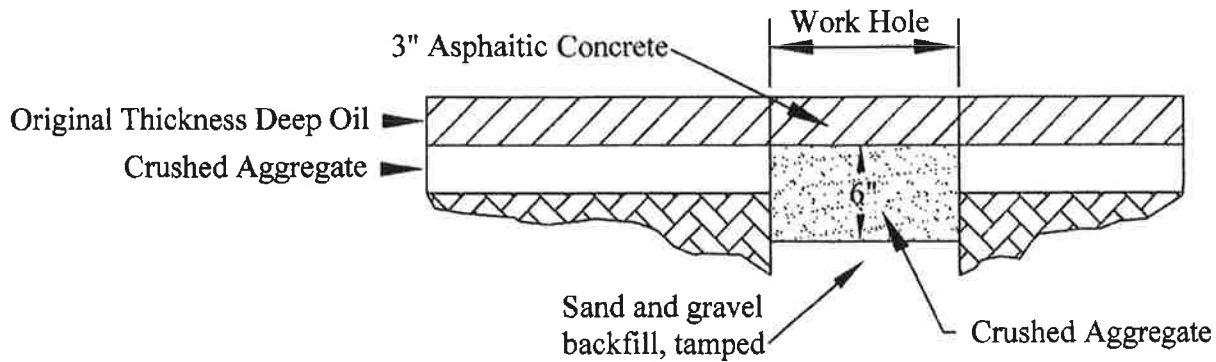
1. Type "A" and "B" Replacement. The replacement width shall be the width of the work hole or disturbed pavement plus twelve (12) inches on each side, but in no case shall it be less than four (4) feet. The final sawcut must be made twelve (12) inches beyond the widest point of the pavement disturbance.
2. Type "C" and "D" Replacement. The replacement width shall be the width of work hole or disturbed pavement plus six (6) inches on each side, but in no case shall it be less than four (4) feet. The final sawcut must be made six (6) inches beyond the widest point of pavement disturbance, or as directed by the Commissioner of Public Works and/or his authorized assistant.



# REPLACEMENT OF PAVEMENT Sections A-A (cont.)

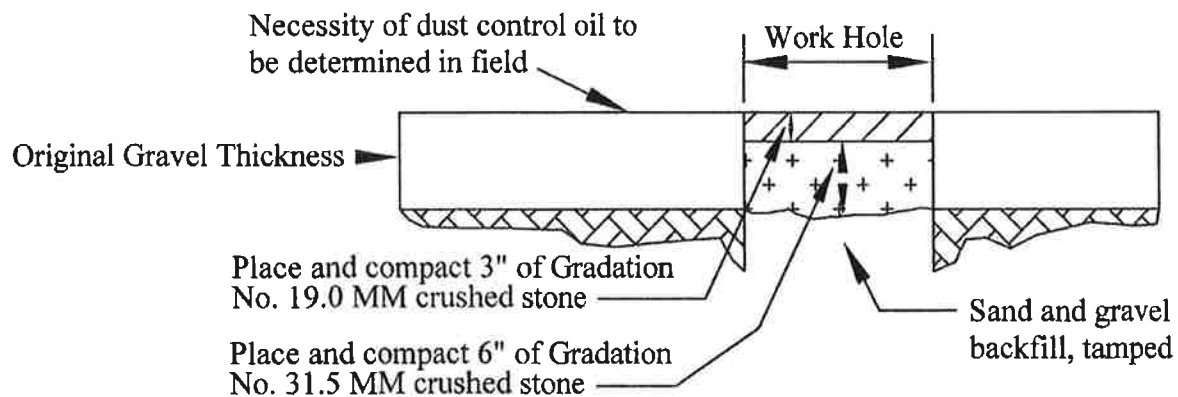
## Type "D" Pavement Replacement

(Deep Oil Streets)



## Type "E" Pavement Replacement

(Gravel Streets)

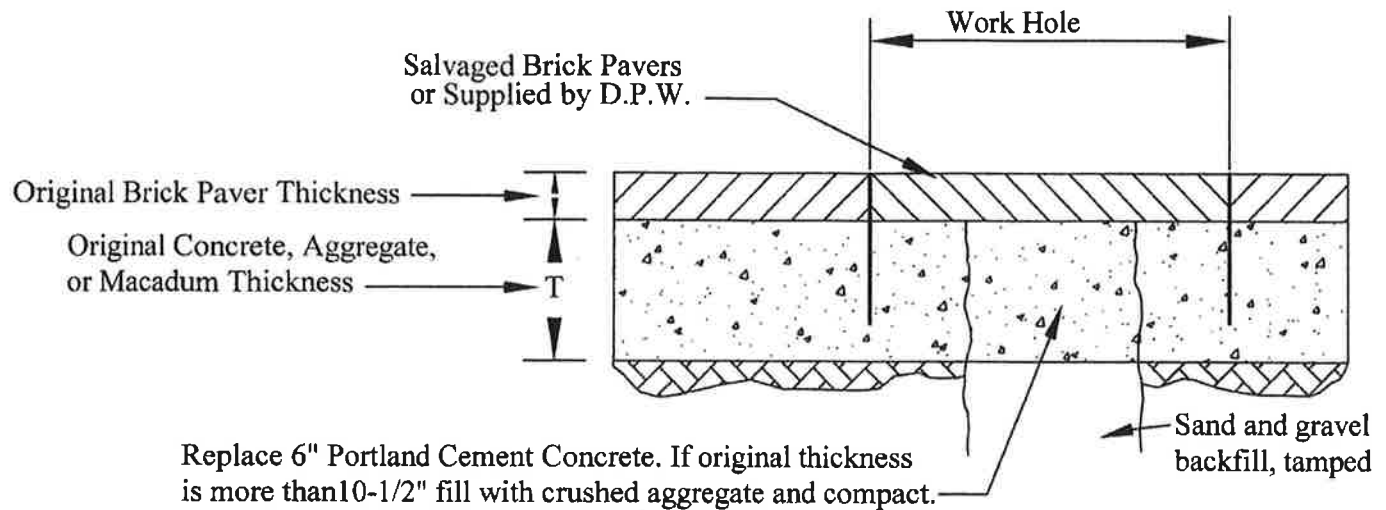




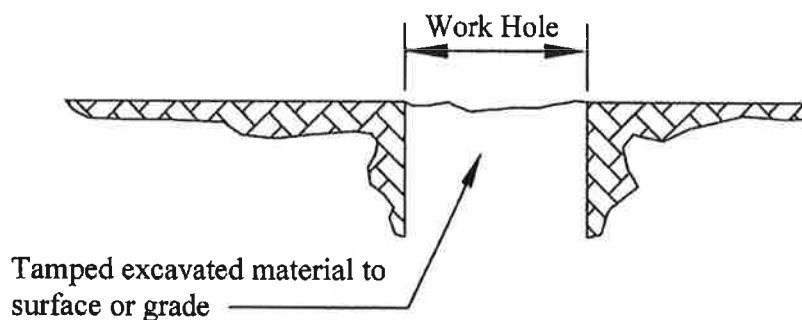
# REPLACEMENT OF PAVEMENT Sections A-A

## Type "F" Pavement Replacement

(Brick Streets)



## Unimproved



## SECTION "B"

### SIDEWALK, DRIVEWAY AND CURB AND GUTTER REPLACEMENT

1. **Sidewalk Replacement**

Sidewalk pavement shall be a one (1) course Portland cement concrete pavement of air-entrained Class "C" concrete. It shall be four (4) inches thick, or six (6) inches thick across driveways and alleys and shall conform to State Specifications.

Full squares of sidewalk shall be replaced at a minimum.

2. **Pedestrian Ramps**

Whenever any sidewalk or curb and gutter is removed and replaced for any reason within five (5) feet of a pedestrian crosswalk, a pedestrian ramp must be constructed to serve the crosswalk. (Crosswalk is defined as any extension of the pedestrian sidewalk, existing or not, across any public street right-of-way).

The exact location of each ramp will be determined by the Commissioner of Public Works. (See page 12 for ramp construction and locations).

3. **Sidewalk Replacement Adjacent to Utility Poles**

Whenever there is sidewalk replacement at or immediately adjacent to a utility pole or street light pole, ½" felt expansion material shall be placed around the perimeter of said pole, as directed by the Commissioner of Public Works.

The location of contraction joints in all sidewalk replaced around utility poles shall be determined by the Commissioner of Public Works.

4. **Driveway of Alley Approach Replacement**

Driveway or alley approaches shall be a six (6) inches thick, one (1) course Portland cement concrete pavement of air-entrained Class "C" concrete and conform to State Specifications.

5. **Curb and Gutter Replacement**

Curb and gutter replacement shall be as required by State Specifications; unless otherwise specified, the cross section of curb and gutter shall conform to the adjacent curb and gutter.

6. **Colored Sidewalk – Downtown Area**

This work shall consist of constructing concrete sidewalk, in accordance with Section 602 of the State Specifications, with jointing pattern to match existing sidewalk, and

hereinafter provided.

Subsection 602.2 of the State Specifications is amended as follows:

- A. Cement: The cement shall be obtained from a single source.
- B. Aggregate: The aggregate for concrete sidewalk, 5-inch, shall be obtained from a sole source.
- C. Concrete: The concrete shall contain no less than five (5) sacks of cement per cubic yard of concrete. No calcium chloride shall be used unless approved by the Engineer and the colored admixture manufacturer. The slump shall not exceed four (4) inches. Supplemental admixtures, such as additional water-reducing admixtures, waterproofing agents, and super plasticizers shall not be used. Do not add water to the mix in the field.
- D. Colored Admixture: The manufacturer's complete technical data sheets shall be submitted for the colored admixture. The colored admixture shall comply with the manufacturer's instructions and shall be delivered in the original unopened packaging and stored in dry conditions. Acceptable manufacturers include:
  - (1) L.M. Scofield Company, Douglasville, Georgia (800) 800-9900.  
Local Contact: Central division office (630) 752-9424.
  - (2) Dynamic Color Solutions (DCS), 2024 S. Lenox Street, Milwaukee, Wisconsin (414) 769-2580.
  - (3) Butterfield Color (800) 282-3388.
  - (4) Or equivalent manufacturer.

The colored admixture shall match in color the previously placed colored concrete sidewalk in the defined downtown area map on page 22. This previously placed colored concrete sidewalk utilized the L.M. Scofield Company CHROMIX item C20 Limestone concrete admixture, or Dynamic Color Solutions #1341 Cream, Grey Cement, 3%.

- E. Curing Compound: The manufacturer's complete technical data sheets shall be submitted for the required curing compound for the colored admixture utilized. The curing compound shall comply with the manufacturer's instructions and shall be delivered in the original unopened packaging and stored in dry conditions. Acceptable manufacturers include:
  - (1) L.M. Scofield Company, Douglasville, Georgia (800) 800-9900.  
Local contact: Central division office (630) 752-9424.
  - (2) Dynamic Color Solutions (DCS), 2024 S. Lenox Street, Milwaukee, Wisconsin (414) 769-2580.

(3) Butterfield Color (800) 282-3388.

(4) Or equivalent manufacturer.

The curing compound must be compatible with all applied finishes designated for use. Previously placed curing compound was Schofield Colorwax as supplied by the L.M. Scofield Company.

7. **Brick Sidewalk – Downtown Area**

This work shall consist of constructing brick sidewalk in accordance with the below specifications, with brick pattern to match existing sidewalk, and herein provided.

A. **Description:** This work consists of placing geotextile fabric over a concrete setting bed, placing leveling sand and installing concrete unit pavers. Installation of 18" square granite inserts in the walkway is incidental to the Concrete Unit Paver installation.

B. **Materials:** Concrete pavers shall be Holland Stone, Rustic Red 3.75 inches by 7.75 inches by 2.25 inches as manufactured by Paveloc Industries.

Compressive Strength: Minimum 8,500 psi at time of delivery.

Absorption: Maximum 5%.

Free-Thaw Test: ASTM C67, no breakage and maximum 1% loss in dry weight after 50 cycles.

Abrasion Resistance: ASTM C18, maximum volume loss 15 cu. cm. per 50 cu. cm. Average thickness loss 3 mm.

Provide only sound units free of defects that would interfere with proper placing of units or impair strength or performance of construction. Minor cracks and minor chipping incidental to methods of manufacture, handling in shipment, and deliver will be acceptable subject to engineer's review and acceptance. Excessive cracks and chipping, as determined by the Architect will be rejected as not complying with specification requirements.

Bedding and Leveling Material: ASTM C33 or AASHTO M43, #10 graded clean course concrete sand, 1" depth.

Joint Fill: Clean concrete sand or mason sand.

Geotextile fabric, Type DF.

C. **Construction:** Place 3' wide geotextile fabric back of curb over concrete base containing weep holes. Cut to fit around existing features. Overlap geotextile fabric 6" when joining pieces.

Spread leveling sand evenly over the entire area to be paved, screed to a level 2" below paver finished grade. Pavers will settle approx. 1/4" when vibrated. Protect screeded leveling course from damage until covered with paver units.

The pavers shall be laid in the pattern shown on the plans and in the details.

Pavers shall be laid "hand tight" in such a manner that the desired pattern is maintained and the joints between the stones do not exceed 1/16". The gaps at the edges of the paved surface shall be filled with stones cut to fit tightly. Pavers shall be cut to a straight, even surface without cracks or chips to fit closely around existing surface features.

Cut pavers with power saw equipment designed to cut masonry with clean, sharp unchipped edges. Cut units as required to provide pattern shown and to fit adjoining work neatly.

Use full units without cutting wherever possible. Where cutting is required, use the largest size units possible. Avoid use of small pieces of pavers or large joint spaces.

Pavers shall be vibrated to their final level by 2 of 3 passes of vibrating plate compactor.

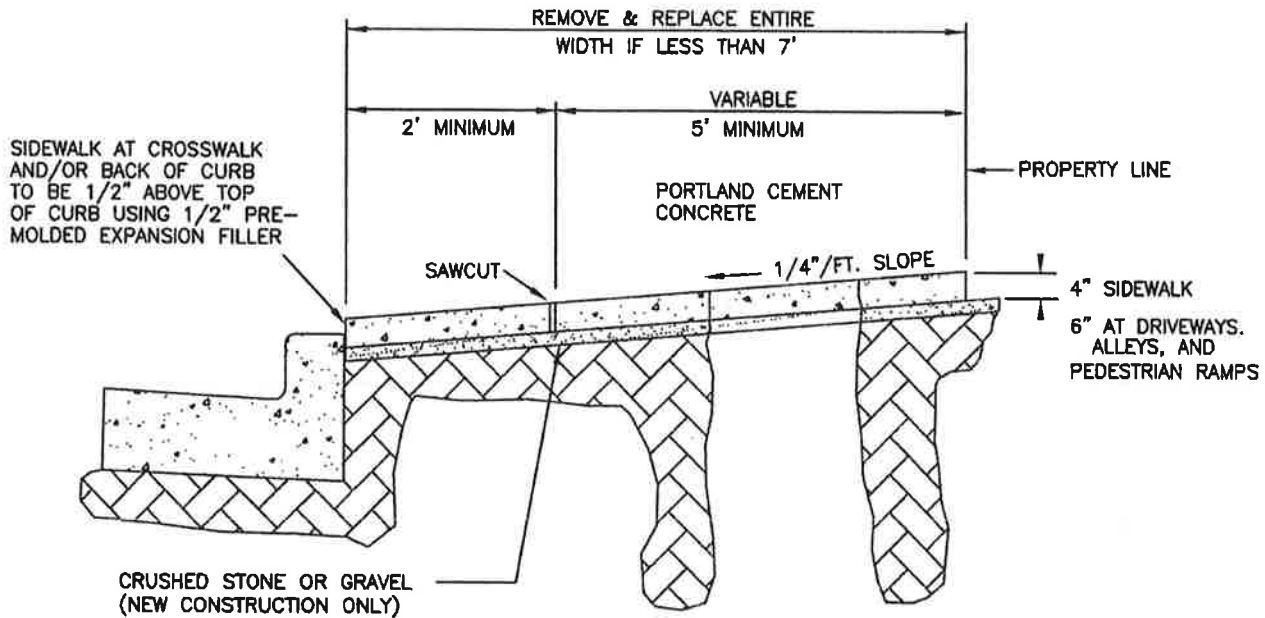
After first vibration, sand shall be brushed over the surface and vibrated into the joints with additional passes of the plate vibrator so as to completely fill joints. Wash sand into joints with water spray after first vibration, let pavers dry, place additional sand on pavers and vibrate a second time. Surplus sand shall be swept from the surface and the entire site left clean.

After final vibrating the surface shall be true to grade and shall not vary by more than 1/4 inch when tested with a 10 foot board at any location on the surface.

Restrict traffic from concrete paver surfaces during setting of units and until completion of installation.

Protect concrete pavers from damage until final acceptance.

## FULL WIDTH SIDEWALK REPLACEMENT



## SIDEWALK SECTION

\*Where parking meters exist in the sidewalk to be replaced, the City Traffic Engineer shall be contacted for removal and replacement.

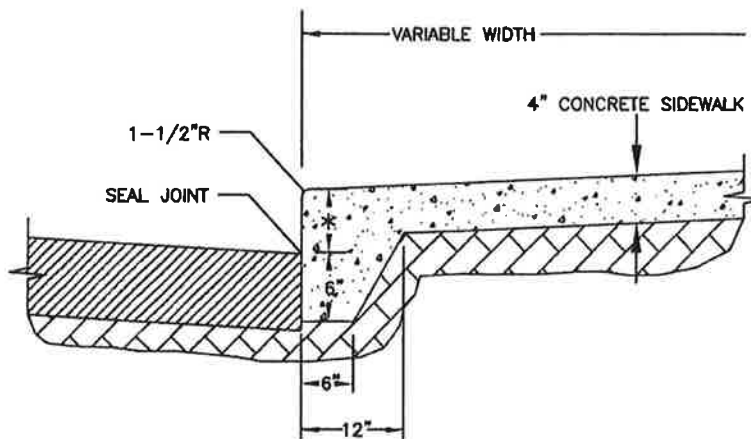
Wherever the sidewalk is full width from property line to curb and has no intermediate longitudinal joint, removal and replacement can form a longitudinal joint if:

- A minimum of 20 lineal feet of sidewalk is to be replaced.
- The sidewalk width from property line to back of curb is 7 feet or more.
- The new longitudinal joint is not less than 5 feet from the property line measured toward the street.
- The sidewalk is sawcut full depth at the new longitudinal joint prior to removal.

REVISED 8/10 T.J.J.

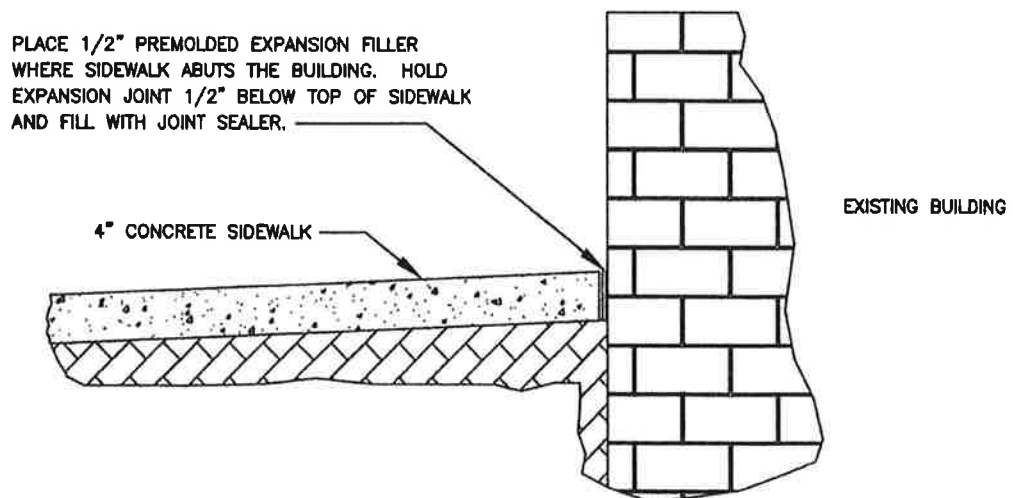
# INTEGRAL CURB & SIDEWALK REPLACEMENT

NOTE: ALL LOCATIONS REQUIRING INTERGAL CURB & GUTTER SHALL BE DETERMINED BY THE COMMISSIONER OF PUBLIC WORKS PRIOR TO ANY REPLACEMENT.

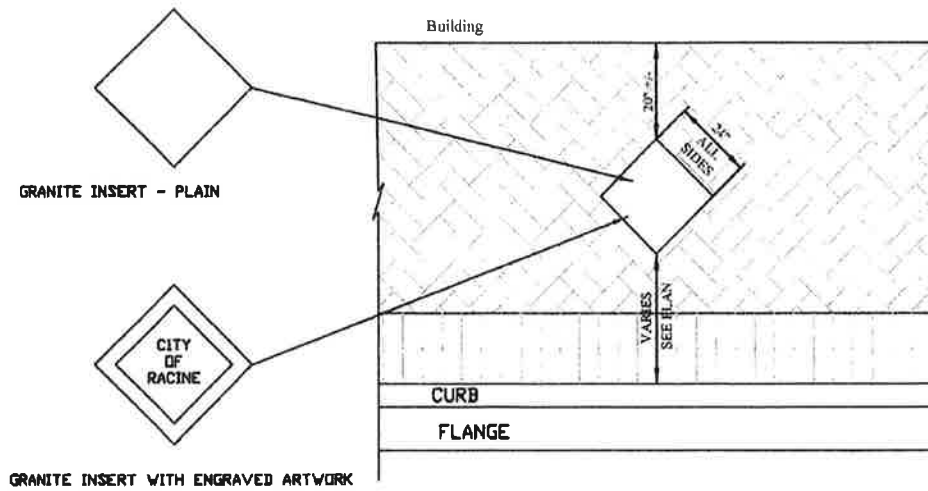


\* HEIGHT TO BE DETERMINED BY ADJACENT CURB.

## SIDEWALK REPLACEMENT ABUTTING BUILDINGS

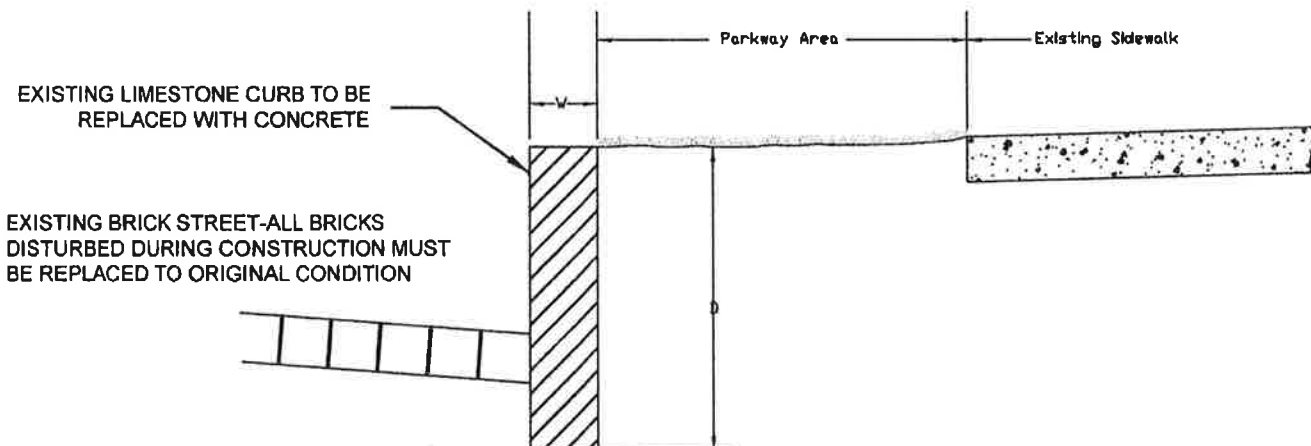


REVISED 8/10 T.J.J.



### GRANITE SIDEWALK INSERT (SIXTH STREET)

NTS



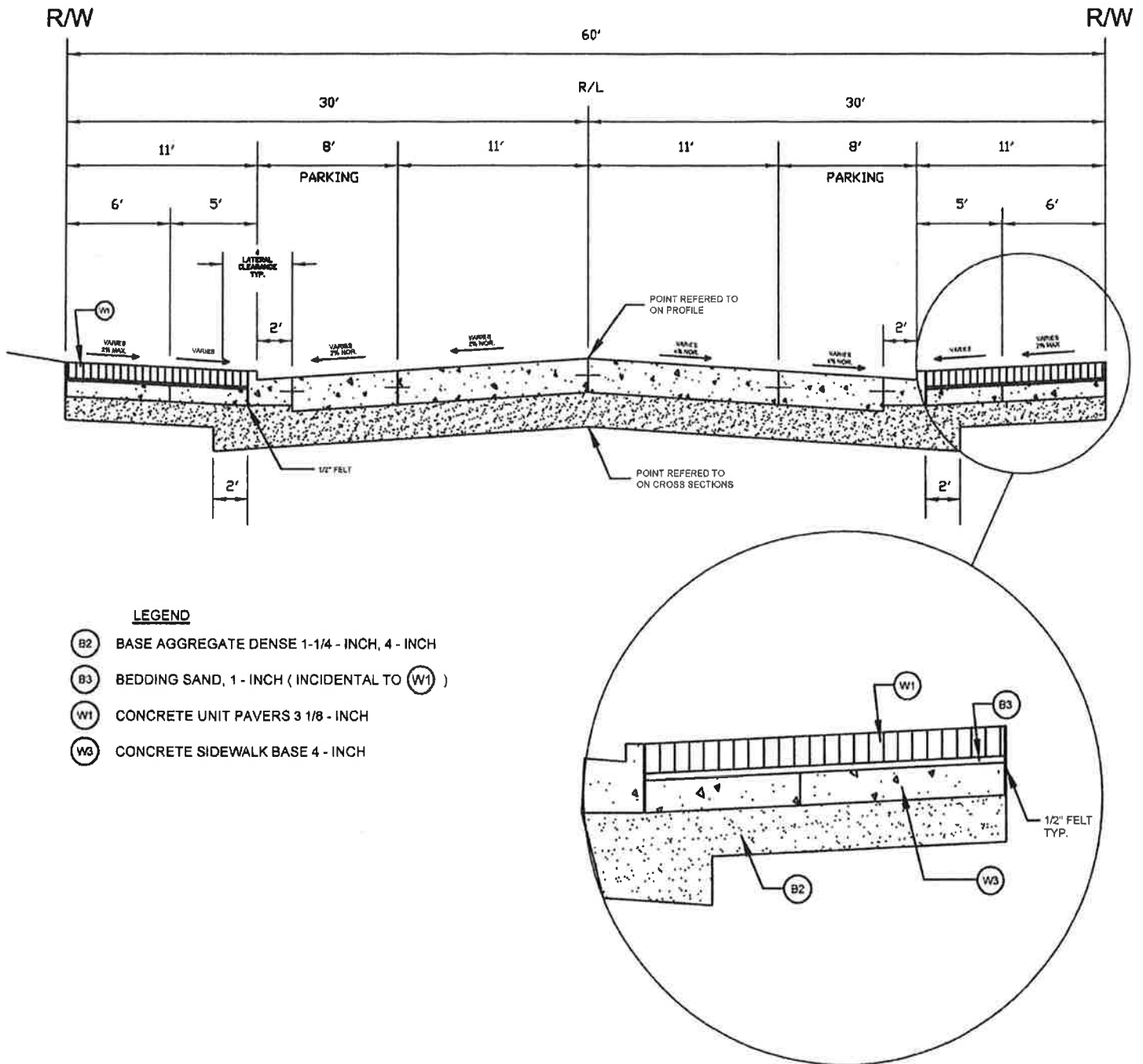
D = NEW CONCRETE DEPTH TO BE EQUAL TO DEPTH OF LIMESTONE CURB REMOVED.

W = WIDTH OF NEW CONCRETE CURB TO BE EQUAL TO WIDTH OF LIMESTONE CURB MEETING AT BOTH ENDS.

### REPLACEMENT OF LIMESTONE CURB WITH CONCRETE CURB (COLLEGE AVE)

NTS



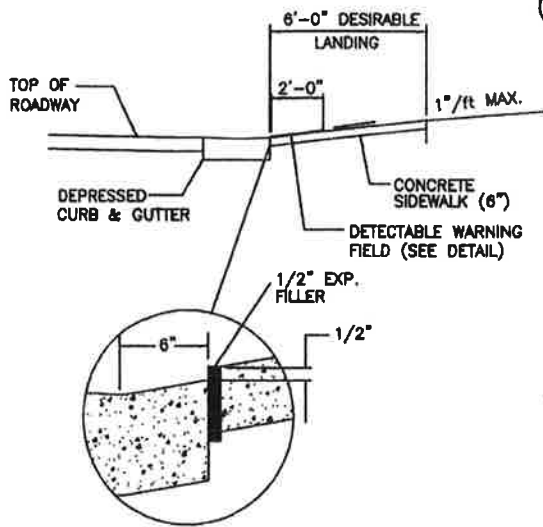


### TYPICAL FINISHED SIDEWALK SECTION (SIXTH STREET)

N.T.S.

# PEDESTRIAN RAMPS

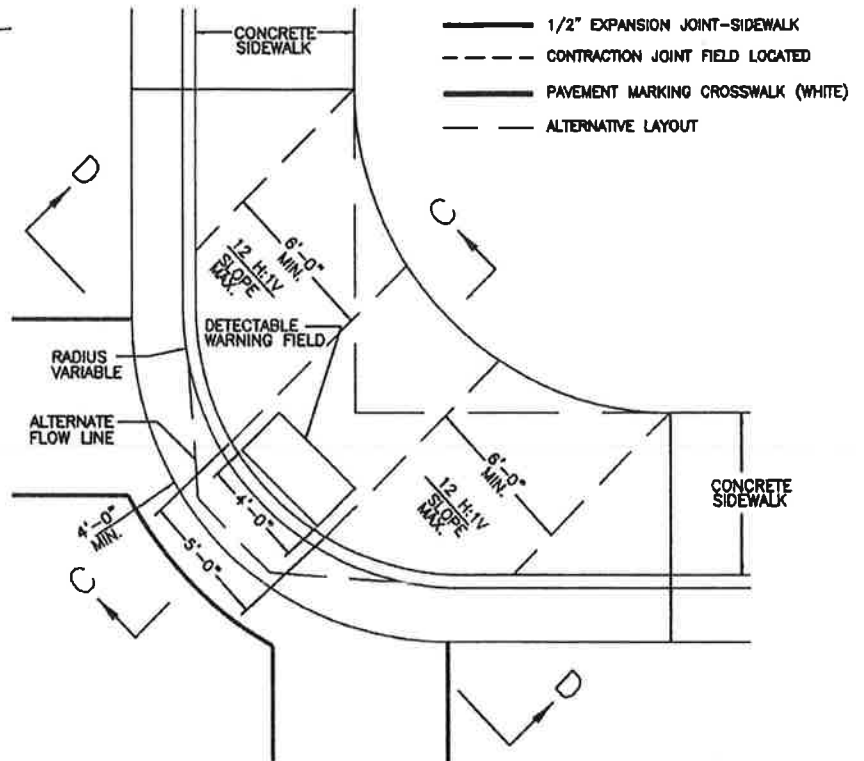
FULL WIDTH SIDEWALK  
(6" THICKNESS)



SECTION C-C

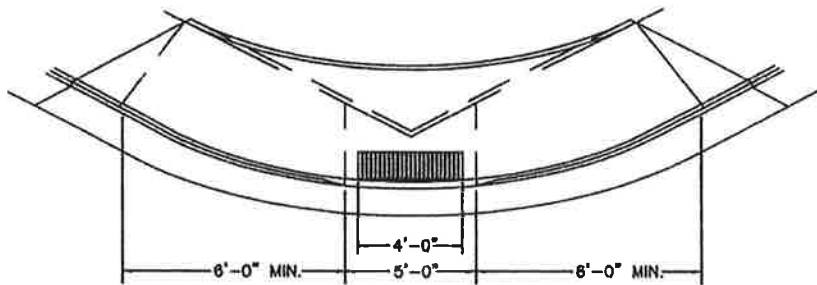
	MIN.	MAX.
A	1.6"	2.4"
B	0.85"	1.5"
C	*	*
D	0.9"	1.4"

\* THE C DIMENSION IS 50% TO 65% OF THE D DIMENSION



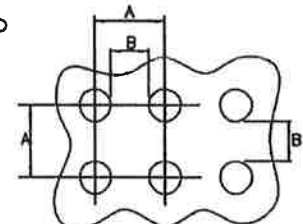
## LEGEND

- 1/2" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)
- ALTERNATIVE LAYOUT

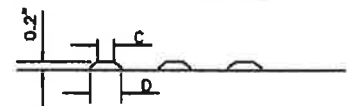


VIEW D-D

TYPE 1-A RAMP  
PLAN VIEW



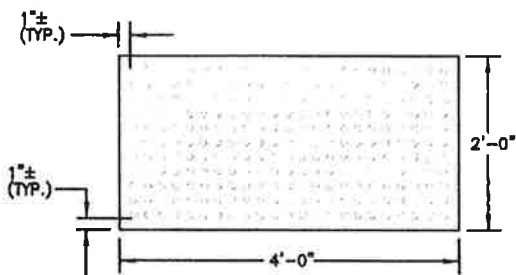
PLAN VIEW



ELEVATION VIEW

## TRUNCATED DOMES

DETECTABLE WARNING  
PATTERN DETAIL



## DETECTABLE WARNING FIELD (TYPICAL)

PLAN VIEW

REVISED 2/11 T.J.J.

## SECTION "C"

### PROTECTIVE SURFACE TREATMENT FOR SIDEWALKS AND PEDESTRIAN RAMPS

1. **Description**

This work shall consist of furnishing and applying an anti-spalling compound consisting of a mixture of 50 percent boiled linseed oil and 50 percent mineral spirits, by volume. This mixture shall be applied to the entire top surface. The concrete shall be surface dry a minimum of three (3) days, or as directed by the Engineer in charge, before application of the mixture.

2. **Materials**

The anti-spalling compound shall meet the requirements of the Specification for Boiled Linseed Oil Mixture for Treatment of Portland Cement Concrete, AASHTO Designation: M 233.

3. **Construction Methods**

Coatings shall be applied to clean, dry surface, free of dust or loose particles. Immediately before application of the mixture, an air blast shall be directed over the surface to be treated so that all dust will be removed.

Mixture shall be applied in two coats; the first at 0.025 gallons per square yard. When the first coat has dried, it shall be followed by a second coat applied at the rate of 0.015 gallons per square yard.

Surface treatment mixture may be sprayed on all surfaces where it is required. Spray nozzles shall be within eighteen (18) inches of the concrete, or as directed by the Engineer in charge. Hand methods will be permitted. The interior of the equipment shall be thoroughly cleaned prior to placing the surface treatment mixture therein. Unless otherwise directed by the Engineer, the temperature of the concrete and the air shall be 50° F., or higher at the time of application. The work under this item shall be completed as soon as practical after completion of construction, prior to opening to pedestrian traffic, and before work is suspended for the winter.

4. **Areas of Application**

Surface treatment, as specified, shall be applied to all pedestrian ramps constructed henceforth from the date of these Street Restoration Specifications. Surface treatment, as specified, shall be applied to all sidewalks constructed on all arterial streets as shown on City of Racine Street Map (See page 22) where the curb and gutter abuts the sidewalk, or where less than a three (3) foot distance exists between face of curb and gutter structure and the outlying edge of sidewalk.

Surface treatment, as specified, shall be applied to any sidewalk as designated by the Engineer.

**The application of the above described surface treatment is not intended to be substituted for the application of curing compound as specified on Page 15, Item 1 of these specifications.**

## SECTION "D"

### CURING CONCRETE, JOINT SEALING AND COLD WEATHER PAVING

#### 1. Curing Concrete

All concrete placed that will serve as a permanent wearing surface shall be cured in conformance with Section 415.3.12 of the State Specifications and meeting the requirements of Section 415.2.4 of the State Specifications. The pavement surface shall be sprayed with a liquid curing compound, A.S.T.M. Designation C309-58 (66) Type 2. The rate of application shall be not less than one (1) gallon per two hundred (200) square feet of surface area.

#### 2. Sealing of Joints

Before barricades are removed to open street for traffic, all joints must be sealed with an approved joint sealer, A.S.T.M. Designation D 6690-06a, or a joint sealer approved by the Commissioner of Public Works and/or his authorized assistant.

#### 3. Concrete Placing During Cold Weather

Cold weather and night concreting shall follow Section 415.3.15 of the State Specifications, 2009 Edition, in addition to the following:

Placing of concrete shall cease when air temperature in the shade falls below 35° F. It shall not resume until the air temperature reaches 30° F. Temperature of the mixed concrete shall be not less than 50° F. nor more than 80° F. at the time of placing.

At any time of the year when the weather forecast is predicting freezing temperatures the contractor shall meet the following minimum level of thermal protection.

<u>Predicted or Actual Air Temperature</u>	<u>Minimum Equivalent Level of Protection</u>
22° F to <28° F	Single layer of polyethylene
17° F to <22° F	Double layer of polyethylene
<17° F	6" of loose, dry straw or hay between 2 layers of polyethylene

Concrete shall not be placed on frozen subgrade.

#### 4. Temporary Bituminous Resurfacing

There may be times when, due to cold weather, etc., the permanent pavement replacement cannot be placed. The Engineer reserves the right, when these conditions exist, to require the Contractor to place a temporary three (3) inch thick bituminous premix surface.

## SECTION "E"

### PLACING AND REPORTING OF STEEL PLATES IN STREETS

1. **Placing of Steel Plates**

When it is found necessary to place steel plates over street excavations, ½" felt expansion material will be placed under the edges of the plates to absorb the weight of vehicles and keep plates from rattling and creating a noise nuisance. The area at ends and sides of plates will be banked with premix blacktop to ensure a smooth riding surface.

2. **Reporting of Plates in Streets**

During periods when snow may be expected to fall, it is the duty of all contractors and utilities to notify the Department of Public Works, telephone number (262) 636-9126, no later than 3:00 P.M. each day giving the exact location of plates placed in streets, such as name of intersection, house number, side of street, etc. This information is vitally important in posting daily operational instructions for snow removal crews. When plates are permanently removed, this information will also be reported to above number.

SECTION "F"

LAWN REPLACEMENT

1. Replacement by Seeding

Clean excavated material which is free from rocks, foreign material and other debris may be used to backfill in grass areas provided the top six (6) inches is backfilled with topsoil conforming to the requirements of Section 625 of the State Specifications. The disturbed area shall be fertilized with Type "A" fertilizer according to the provisions of Section 629 of the State Specifications and seeded using mixture No. 40 in accordance with Section 630 of the State Specifications to which 20% to 25% by weight of annual rye grass has been added. The rate of application shall be no less than 3 lbs./1000 square feet.

2. Replacement by Sodding

Sod shall be required on all slopes, terraces, public grounds, churches, schools, hospitals, bus stops, places of business and all high pedestrian traffic areas, and also in areas where property owners have proof of having installed new sod within one (1) year and in some special cases where a lawn turf exists, such as Merion Blue or other special type grass which cannot be matched by seeding. The Commissioner of Public Works may, at his discretion, rule on cases for sodding which are not listed here.

Sod shall be installed per Section 631 of the State Specifications and in the following manner: Fertilize and loosen up bed in same manner as for seeding. Firm and level the bed, as a final step, prior to installing sod (3/4" thick sod is recommended). After sod is laid, tamp lightly and topdress with a small amount of good black screened loam dirt. Work dirt into cracks with broom or back of rake to ensure a good seal to prevent air from getting under sod.

The final determination will be made by the Commissioner of Public Works in the event of questions regarding whether an area shall be sodded. Contractors and utilities are advised to direct any questions to the Commissioner of Public Works prior to requesting permits for utility work.

Upon completion of sodding or seeding, all contractors and utilities shall inform property owners of proper procedure to follow in caring for the sodded or seeded area such as regular sprinkling, etc., until sod is properly rooted and seed has germinated. This can be done by verbal notification or leaving cards with full instructions at the residences.

3. **Replacement Adjacent to City Bus Stops**

Sod shall be placed from a point forty-five (45) feet in front of official City bus stop signs to a point five (5) feet behind said signs.



## SECTION "G"

### BACKFILLING

#### 1. Definitions

Sand and Gravel Backfill -- As described in Section 209 of State Specifications.

Slurry Sand -- A mixture of torpedo sand and water, containing 0% to 50% of the aggregate as gravel or crushed stone with between 30 to 45 gallons of water per cubic yard. This mixture may contain one bag of Portland cement per cubic yard where heated water shall be used during subfreezing temperatures.

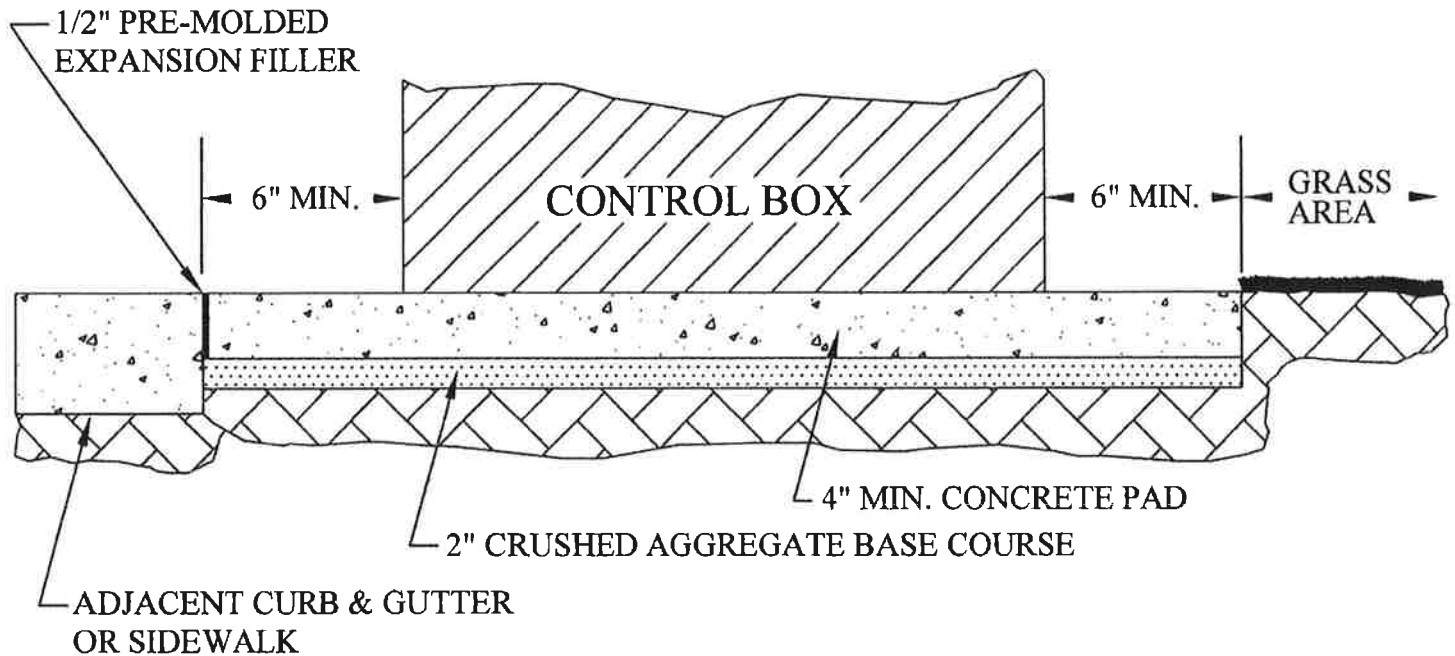
Tamping -- Tamping shall be performed on backfill so as to obtain maximum compaction by placing loose backfill in approximately one (1) foot thick layers and tamping with a vibratory tamping machine. Hand tamping can be substituted around pipes and facilities where machine tamping could cause damage.

Specifications -- All excavations shall be backfilled with sand and gravel backfill properly tamped or slurry sand, except as noted below where slurry sand is required:

- a. Excavations where adequate shoulders cannot be maintained adjacent to work holes.
- b. Excavations that cannot be tamped in 1 foot layers.
- c. Excavations where the adjacent pavement, curb and gutter or sidewalk is undermined, therefore impossible to properly tamp.
- d. Excavations under crosswalks and driveway approaches (that portion of driveway between the sidewalk and curb line).
- e. Excavations in major arterial streets shown on attached City of Racine Department of Public Works' street map (Page 22). The Commissioner of Public Works and/or his authorized representative may at their discretion require slurry sand as backfill in areas other than those referred to above if, in their judgment, they deem that slurry sand is required for proper compaction. City of Racine Street Map, dated August, 2010, supersedes any and all street maps submitted for street restoration.

## SECTION "H"

# CONTROL BOX PLACEMENT



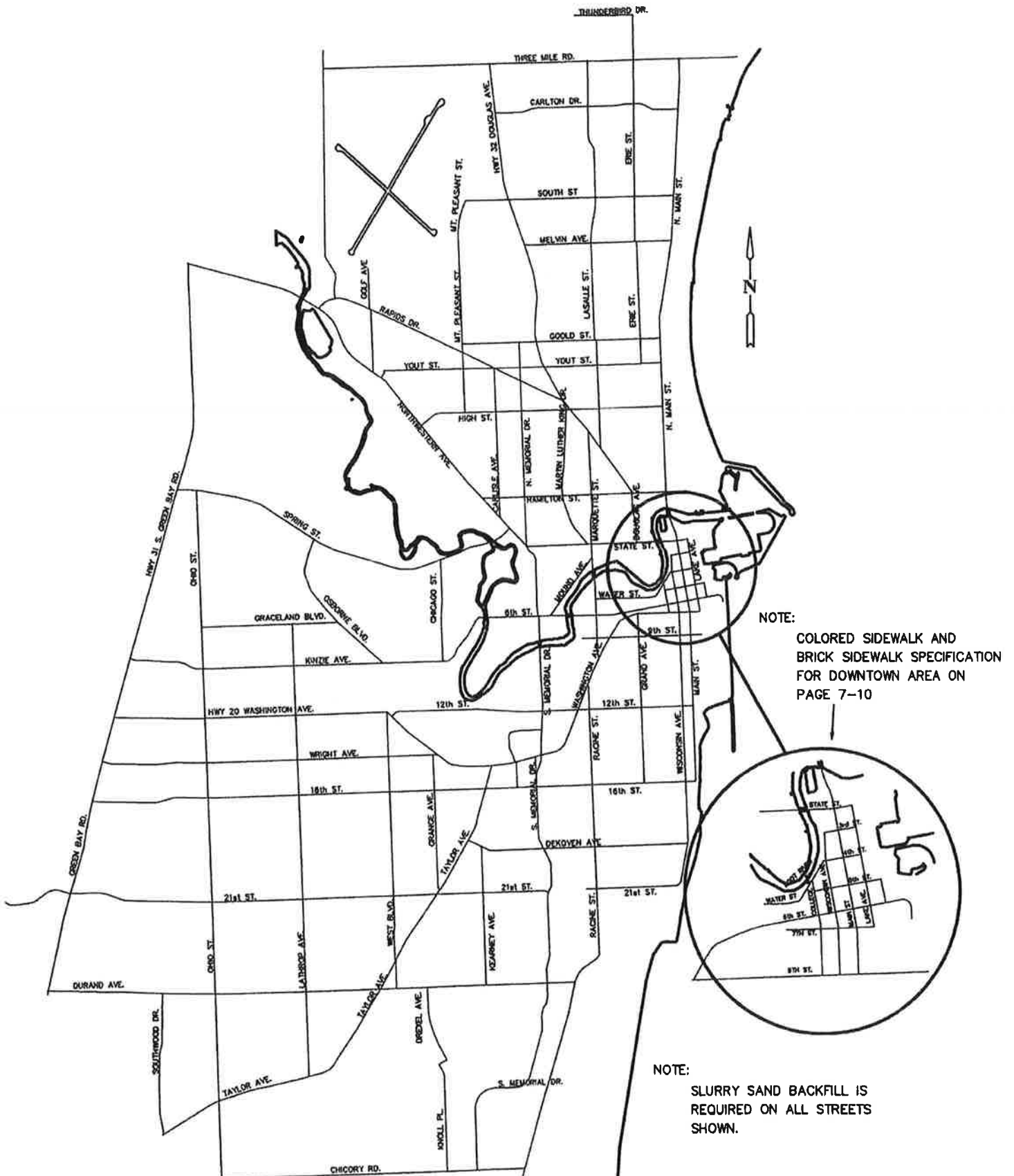
1. When installed in a grass panel area, control boxes shall have a concrete pad 4" thick and 6" wide extending around box, level with adjacent grass or existing concrete.
2. When space between edge of 6-inch wide pad and curb is less than 18-inches, concrete shall extend to the curb.
3. When concrete pad abuts existing concrete (curb or sidewalk) a felt joint shall be installed.
4. When control box is installed in a residential area, grass restoration with sod is advisable unless extensive panel restoration is required.

SECTION "I"

REQUEST FOR DEVIATION FROM SPECIFICATIONS

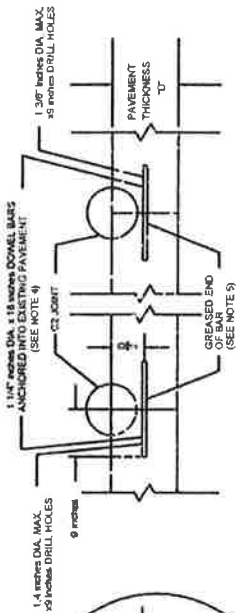
Any changes and/or deviations from these specifications must be approved by the Commissioner of Public Works before proceeding with the work. Each request for a change will be considered separately and approval of a change will not be misconstrued to mean these specifications have been amended.

SECTION "J"



## GENERAL NOTES

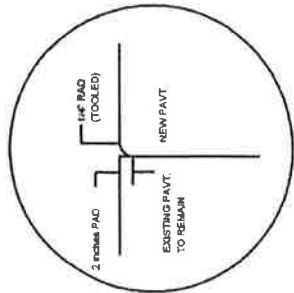
- 1 DOWEL BARS SHALL BE INSTALLED PARALLEL TO THE PAVEMENT CENTERLINE AND PAVEMENT SURFACE
- 2 CONCRETE BASE PATCHING SIZES AND LOCATIONS ARE SHOWN ELSEWHERE IN THE CONTRACT
- 3 THE PREPARATION OF FOUNDATION FOR CONCRETE BASE PATCHING SHALL BE IN ACCORDANCE WITH SUBSECTION 211.4.4 OF THE STANDARD SPECIFICATIONS
- 4 DOWEL BARS SHALL BE ANCHORED INTO DRILL HOLES WITH AN APPROVED EPOXY GROUT
- 5 THE FREE END OF DOWEL BARS SHALL RECEIVE A THIN UNIFORM COATING OF GREASE



SECTION D-D

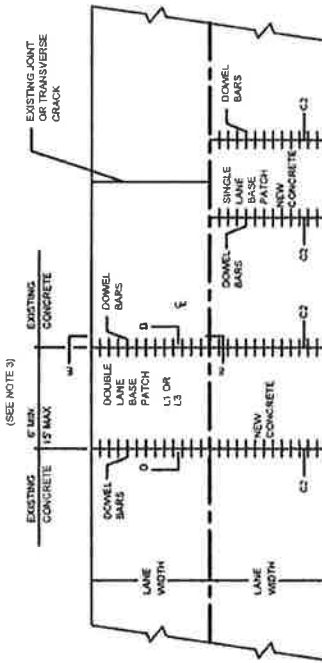
L3

## LONGITUDINAL JOINTS



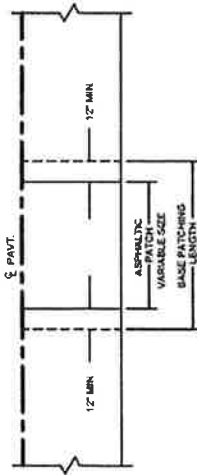
TRANSVERSE JOINTS

C2

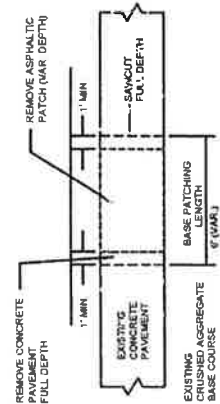


PLAN VIEW

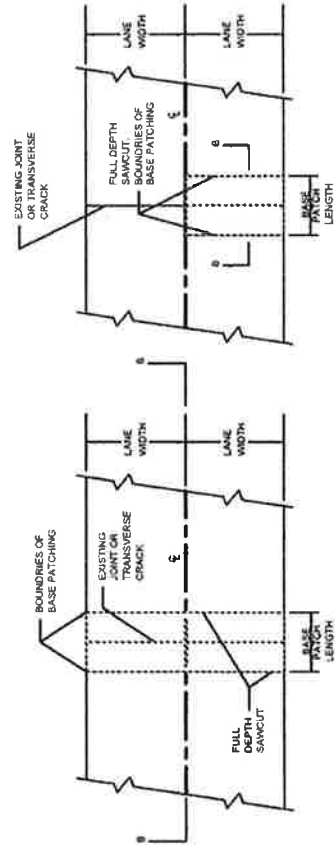
## BASE PATCHING, CONCRETE



PLAN VIEW



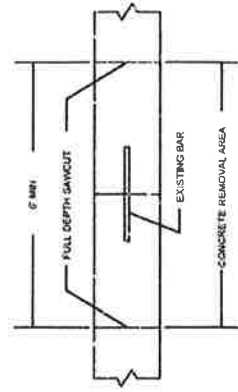
CROSS SECTION  
PATCH REMOVAL



PLAN VIEW

(DOUBLE LANE BASE PATCHING)  
(SINGLE LANE BASE PATCHING)

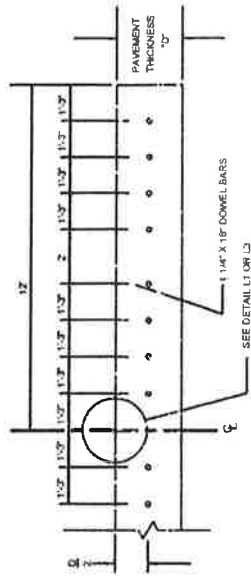
## FULL DEPTH CONCRETE PAVEMENT REMOVAL



SECTION B-B

## DOWEL BAR SPACING ABUTTING EXISTING PAVEMENT

(FOR 11' LANE WIDTH REDUCE CENTER SPACE TO 12')



SECTION E-E

REVISED 12-10-04 T.J.J.

