

CITY OF CHARDON, OHIO
MUNICIPAL SPECIFICATION FOR
SIDEWALKS
SECTION 5

Updated March , 2013

MUNICIPAL SPECIFICATIONS FOR SIDEWALKS

SECTION 5

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MUNICIPAL SPECIFICATIONS FOR SIDEWALKS

SECTION 5-A

CONSTRUCTION REQUIREMENTS

- 1. LOCATION:** The sidewalk, curb ramps, drive aprons and curb are in numerous locations throughout the City. (Also see Detailed Specifications.)
- 2. SAFETY:** See Section 1-A, General Requirements.

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SECTION 5-B

CONCRETE SIDEWALK

1. DESCRIPTION: The Contractor shall furnish and install the sidewalk, driveways, curb and curb ramps as directed and as specified herein. Unless noted otherwise, replacement sidewalk shall match the existing width, except the minimum sidewalk width shall be 4'-0". Existing 4'-0" width sidewalk shall be replaced with a minimum width of 4'-0". Existing 5'-0" width sidewalk shall be replaced with a minimum width of 5'-0". All new construction of sidewalk shall be a minimum width of 5'-0".

2. DEMOLITION:

A. Removal: The Contractor shall remove existing pavements, ramps, curbing, manhole castings, vegetation and soil as designated.

B. Existing Utilities: The Contractor shall exercise caution in removing pavements near existing underground utilities. The Contractor is responsible for making any notifications to utility companies for field locating any nearby utilities. Any damage done to underground utilities shall be the Contractor's responsibility.

C. Salvage: All material designated by the City to be salvaged shall be removed with care, cleaned and transported to a site designated by the City.

D. Saw Cutting: Existing pavements shall be saw cut full depth as designated on the plans. Saw cuts shall be made through an existing joint which divides the existing walk into blocks. Partial blocks may not be removed without approval. Ragged edges shall be trimmed so as to provide a straight line junction between existing and proposed pavements. The edges of the existing pavement remaining shall be left vertical.

E. Debris: All debris, rubble, unusable materials and items not salvaged shall become the property of the Contractor and shall be removed from the site.

3. PREPARATION OF SUBGRADE: The subgrade shall be brought to an even, uniform, and compacted surface, 6, 8, or 10 inches as required, below the finished surface of the pavement. Soft or spongy earth, organic or other perishable matter shall be removed and the space filled with granular backfill material. Wherever a fill is necessary to support the

sidewalk, material for the fill shall be spread in 4 inch layers and each layer thoroughly compacted.

4. AGGREGATE BASE: The aggregate base shall be placed and compacted to an even, uniform surface, 4 “, 6”, or 8” as required, below the finished surface of the concrete pavement. (No recycled material permitted.)

The minimum compacted thickness of the aggregate base shall be as follows:

<u>Item</u>	<u>Compacted Base</u>
1. 4" Concrete Sidewalk	2"
2. 6" Concrete Sidewalk	4"
3. 6" Concrete Drive Apron	4"
4. 8" Concrete Sidewalk or Drive Apron	4"
5. Curb Ramp	4"
6. Concrete Curb Type 3	4"
7. Concrete Curb Type 6	4"

5. MATERIAL:

A. Concrete: Portland cement concrete for sidewalks shall be Class "C" concrete as described under Item 499, "Concrete, General" in the State of Ohio, Department of Transportation Construction and Material Specifications. Such adjustments shall be made in the materials, proportions and methods of mixing as may be necessary to entrain 4 to 7 percent air in the concrete. When placed, the slump of the concrete shall not exceed 4 inches. The Contractor shall furnish the Municipality a copy of each delivery slip showing batch weights for all concrete used.

1. Concrete Quality Control: The Contractor shall provide, at no additional cost to the Municipality, an onsite certified testing laboratory. The certified testing laboratory shall be preapproved by the Municipality. The Contractor shall furnish the concrete for the required analysis; protect the test cylinders from damage until they are picked up by the laboratory within 24 hours of being made. The testing laboratory shall perform the

minimum of each of the following quality control analysis for each day=s pour or for each 30 cubic yards, or part thereof, of concrete placed per day. The Municipality may require the following analysis to be performed on each truck load of concrete placed:

- a. Percent air entrainment.
- b. Inches of slump.
- c. Two 6 inch by 12 inch test cylinders to be analyzed for compressive strength at 7 days and 28 days.

Note: Homeowners repairing their own residents need only material delivery manifest to City Inspector.

The testing laboratory results shall be immediately forwarded to the Municipality upon completion.

No payment shall be made for any item where the seven day breaks have not been received by the Municipality.

B. Expansion Joints: Expansion joint material shall conform to Section 705.03, State of Ohio, Department of Transportation Construction and Material Specifications.

C. Curing Compound: White pigmented liquid membrane curing compound shall be tested in accordance with ASTM C309 and conform to Type 2, Section 705.07, State of Ohio, Department of Transportation Construction and Material Specifications.

D. Granular Fill: Granular material shall be crushed limestone meeting the grading specified in Municipal Specification, General Requirements, Section 1-D, Granular Backfill.

E. Aggregate Base: Aggregate base shall be crushed limestone meeting the grading specified in Municipal Specification, General Requirements, Section 1-D, Granular Backfill.

6. INSTALLATION:

A. Thickness: All concrete sidewalk, curb, and curb ramps shall be of monolithic construction. The sidewalk shall have a minimum thickness of 4 inches except within the limits of driveways, where the minimum thickness shall be 6 inches for one and

two family residential driveways and 8 inches for all other driveways and commercial applications.

B. Grade:

1. Replacement Sidewalk: The proposed sidewalk shall be placed on the same line as the existing sidewalk which is removed. The proposed sidewalk shall meet the existing grade at each end of the replacement area and maintain a constant grade across the replacement.

2. New Sidewalk: The proposed sidewalk shall be placed on the grade line as shown on the plans and/or specification. The proposed sidewalk shall meet the existing grade at each end of the project area and maintain a uniform gradient across the project area.

C. Forms: Forms for concrete sidewalks shall be of wood or metal and extend for the full depth of the concrete. They shall be of sufficient strength to resist the pressure of the concrete without springing. The forms shall be set true to line and grade and be securely staked and held. Flexible strips shall be used for curves. The surface of the walk shall have a transverse slope of 1/4 inch per foot, with the low side adjacent to the roadway, unless noted otherwise.

D. Expansion Joints: Expansion joints 1/2 inch thick of preformed expansion joint material shall be provided in all instances where sidewalks meet curbs, existing walks, steps, driveways, concrete structures, along building facades and across the walk at intervals of approximately 20 feet.

E. Control Joints: Control Joints shall be weakened plane joints installed with a 1/4 inch radius grooving tool. The surface of the walk shall be divided into equally spaced blocks at approximately five (5) foot intervals to form rectangular blocks. Additional grooves shall be placed over drains, at changes in walk thickness and as directed by the Owner. Joints shall be perpendicular to the line of work. At curves in the walk, joints shall be radial.

F. Placing and Finishing: The aggregate base shall be thoroughly moistened immediately prior to placing concrete to ensure that no moisture will be absorbed from the fresh concrete. The concrete shall be deposited in a single layer. It shall be tamped, spaded or vibrated to consolidate the concrete. It shall be struck off with a template and smoothed with a float to produce a flat uniform surface. No plastering shall be permitted. The walk shall be steel troweled to be smooth and even. All outside edges and joints shall be edged with a 1/4 inch radius edging tool. The walk shall be finished with a broom finish with hand tooled edges. The walk shall be

re-marked as necessary after final finishing to assure neat uniform edges, joints and score lines.

G. Structures Encountered: The Contractor shall adjust main line or hydrant valve boxes, water or gas service boxes, water meter chambers and manhole or inlet castings in the area of the walks or curb ramps to conform to the finished grade. The Contractor shall furnish necessary parts and repair all valves or service boxes or other castings damaged by construction of the sidewalk.

H. Drain Replacement: Existing drains passing through the sidewalk area shall be protected when they are at such grade that the top of the pipe barrel is at least 3 inches below the top of the sidewalk or finished grade of the sod strip. Drains having less than 3 inches cover shall be lowered or replaced for such length as necessary to get cover and to meet the existing pipe grade in the lawn. Pipe used for replacement shall be minimum 4" nominal diameter standard strength vitrified clay pipe, SDR 26 PVC pipe or standard strength cast iron soil pipe. In all cases the joints between sections shall be sealed by method appropriate for the pipe being used. Where the replacement pipe is of different type from the existing pipe the joint between the two shall be made watertight and mechanically secure. If the replacement pipe is carried through the curb, the curb opening shall be cleaned out and mortared in a neat and workmanlike manner after the replacement pipe is installed.

7. CURING AND PROTECTION: Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury. After finishing, the concrete shall be sealed by spraying a membrane curing material in such a manner as to provide a continuous, uniform, water-impermeable film without marring the surface of the concrete. A minimum of one gallon of material shall be used per 200 square feet of surface treated. The curing material shall be white pigmented and of such a nature that it is distinctly visible for at least 4 hours after application.

A. Temperature: No concrete shall be placed when the air temperature is below 35 degrees (F) without approval by the Owner. No concrete shall be placed on frozen ground.

8. CLEAN-UP AND RESTORATION: As the walk is completed and forms removed, the Contractor shall immediately backfill the excavation, remove surplus material and leave the walk and adjacent areas entirely free from any objects or material that may endanger public safety.

A. Lawn Repair: Damaged lawns and grass plots within the street right-of-way shall be repaired as specified in the Municipal Specifications, General Requirements, Section 1-F, Grading and Seeding.

All lawns or terraces damaged outside the street right-of-way shall be repaired as specified in the Municipal Specifications, General Requirements, Section 1-F, Grading and Seeding.

9. PAVEMENT REPAIR: Where concrete walks are constructed across an existing asphaltic concrete or stone driveway, the portion of the driveway cut out to place the forms shall be replaced with material similar to that removed.

10. ACCESS: The disruption of access to driveways due to this work shall be kept to a minimum. The scheduling for this work shall be discussed with each property owner affected prior to commencing the replacement operation. Excavation in traffic areas shall not be left open overnight.

MUNICIPAL SPECIFICATIONS FOR SIDEWALKS

SECTION 5-C

CURB RAMPS

1. DESCRIPTION: The Contractor shall furnish and install curb ramps as directed, as specified herein, in conformance with ADA and ODOT guidelines, and all applicable requirements of Section 5-B. Unless noted otherwise, replacement curb ramps shall match the existing sidewalk width, except the minimum width shall be 5'-0".

2. RAMP REQUIREMENTS: All curb ramps constructed under this specification shall conform to the following. Please refer to the curb ramp component sketch for explanations of the following ramp components.

A. RAMP:

- 1. Width** shall match the width of the abutting sidewalk but shall not be less than 5'-0" in width.
- 2. Length** will vary with the curb height and the setback of the sidewalk and shall not be less than 5'-0".
- 3. Running Slope** shall be a minimum of 5% (1:20) and a maximum of 8.33% (1:12). Although permissible, ramps with slopes approaching the maximum 8.33% are discouraged and these slopes should be avoided where possible.
- 4. Cross Slope** shall be a minimum of 1.56% (1:64, 3/16" per foot) and a maximum of 2.08% (1:48, 1/4" per foot).

B. TOP LANDING:

- 1. Width** shall match the width of the abutting sidewalk but shall not be less than 5'-0" in width.
- 2. Length** of top landings shall be a minimum of 5'-0".
- 3. Running Slope** shall be a maximum of 2.08% (1:48, 1/4" per foot).
- 4. Cross Slope** shall be a maximum of 2.08% (1:48, 1/4" per foot).

C. STREET LANDING: Street landings are required at shared (diagonal) ramps.

- 1. Width** shall match the width of the abutting ramp but shall not be less than 5'-0" in width.
- 2. Length** of street landings shall be a minimum of 4'-0".
- 3. Running Slope** shall be a maximum of 2.08% (1:48, 1/4" per foot).
- 4. Cross Slope** shall be a maximum of 2.08% (1:48, 1/4" per foot).

D. COUNTER SLOPE: If no street landing is required, the counter slope area of the roadway pavement at the base of the ramp shall meet the following criteria.

1. **Width** shall match the full width ramp but shall not be less than 5'-0" in width.
2. **Length** shall be a minimum of 2'-0" at the bottom of the ramp.
3. **Running Slope** shall be a maximum of 5% (1:20)
4. **Cross Slope** shall be a maximum of 2.08% (1:48, 1/4" per foot).

E. FLARES: If required, shall meet the following criteria. Flares are not required if the surface adjacent to the ramp is not walkable.

1. **Flare Slope** shall be a maximum of 10% (1:10) but shall not be wider than 10 times the curb height measured along the curb line.

F. CURB LIP: The curb lip shall be flush with the pavement surface at the face of curb and shall have a maximum of 1/2" rise from the face of curb to the back of curb.

G. DETECTABLE WARNINGS: Detectable warning strips shall be a contrasting color from that of the curb ramp and be installed for a distance of 2'-0" from the back of the curb for the entire width of the ramp.

1. **Materials** shall be ADA brick pavers meeting the requirements of ASTM C 902 Class SX, Type I, C 936, or C 1272 Type R. Pavers shall be 4" x 8" x 3-1/2" thick and have truncated domes as required by the ADA.
2. **Installation.** ADA brick pavers shall be laid on a 2-1/2" bed of crushed limestone granular material meeting the grading specified in Municipal Specification, General Requirements, Section 1-D, Granular Backfill.

3. CURB RAMP COMPONENTS:

