

824 - CONCRETE SIDEWALK AND SIDEWALK RAMP CONSTRUCTION

824.1 DESCRIPTION

All sidewalk and sidewalk ramp construction shall be constructed to the lines and grades shown on the Drawings or established by the City Engineer.

824.2 MATERIALS

All sidewalks shall be constructed using Portland Cement Concrete. Portland Cement Concrete shall conform to Section 401 "Concrete Construction" All sidewalk ramps shall be constructed using Portland Cement Concrete. Portland Cement Concrete shall conform to Section 401 "Concrete Construction".

All concrete used in construction of sidewalks and sidewalk ramps shall be classified as KCMMB 4K.

824.3 CONSTRUCTION REQUIREMENTS

All sidewalks and sidewalk ramps shall be constructed in compliance with the American with Disabilities Act of 1990, 42 U.S.C. 12101 et seq.

a. Location

All public sidewalks and sidewalk ramps constructed within the City shall be located in the public right-of-way or within a public sidewalk easement. The standard location shall be one foot from the right-of-way or easement line, except when a ditch section is used in RE Districts where they shall be one foot from the shoulder. Sidewalks and sidewalk ramps shall be constructed to allow access to all pedestrian signal actuation devices.

Sidewalk ramps shall be constructed at all street crossings and commercial entrances. Curbs at ramp locations must provide a gradual transition from gutter line to back of curb. If the street curb has not been constructed to receive the sidewalk ramp, the sidewalk constructor shall remove a section of the curb and reconstruct as required.

b. Dimensions

The width of new sidewalk construction shall be as indicated on the plans. The minimum width of public sidewalks not immediately behind the curb shall be four feet with a five foot square passing space every 200 feet of continuous sidewalk. The minimum width of public sidewalks along thoroughfare corridors shall be five feet. The minimum width of public sidewalks immediately behind the curb shall be six feet. The minimum allowable thickness shall be four inches for sidewalks and eight inches for sidewalk ramps.

c. Grades and Slopes

The grade or slope along the length of the walk shall be as near parallel to the street gradient as practical. The maximum longitudinal slope shall be one inch per foot, except where a variance from street grade has been approved by the City Engineer. The desired cross slope for sidewalk is 1%; the maximum allowable cross slope is 2% with absolutely no tolerance for exceeding 2%, due to Federal requirements. This maximum cross slope standard also applies when the walk crosses drives and shall slope toward the street, except in RE Districts where a ditch section is used. Dimensional requirements of sidewalk ramps can be found on the Sidewalk and Sidewalk Ramp Detail sheets in the Overland Park Standard Details.

The finish grade of the sidewalk shall be such that the slope of the finish grade between the curb and the sidewalk will not exceed one-half inch per foot and will not be less than one-quarter inch per foot and shall slope toward the street, except in RE Districts where a ditch section is used.

d. Subgrade Preparation

The subgrade shall be uniformly compacted to a Type B density of 90% with a moisture range of MR-90. The subgrade shall be evenly graded to the required subgrade elevation. All loose or extraneous material shall be removed from the subgrade and soft spots shall be uniformly recompacted prior to placement of concrete. Sidewalk concrete material shall not be placed on frozen subgrade. The Contractor

shall have available adequate hand or mechanical compaction equipment to accomplish the compaction as set forth in these specifications. The subgrade shall be properly moistened prior to placing concrete.

e. Forms

All forms shall be sufficiently strong and rigid and securely staked and braced to obtain a finished product correct to the dimensions, lines and grades required. Forms may be of steel or wood at the option of the contractor.

Each form shall not vary more than one-quarter inch in longitudinal and vertical alignment for each ten feet in length. All forms must be cleaned and oiled before each use. A slip-form machine, equipped with electronics, may be used in lieu of forms. The machine shall be equipped with mechanical internal vibrators and shall be capable of placing the finished sidewalk to the correct cross section, line and grade as required in this section. Adjustments of the string line and/or slip-form machine shall be made to give a smooth and accurate line and grade.

f. Reinforcing

Reinforcing of sidewalks will not be required except where adjoining a curb inlet and unusual conditions where the City Engineer may require reinforcing or welded wire fabric. When welded wire fabric is used it shall be placed two inches (2") from the finished surface of the sidewalk. The reinforcement shall be supported using set spacing such that between the supports, the reinforcement does not deflect or sag excessively. For sidewalk adjoining curb inlets, the reinforcing steel shall be placed according to the detail for "Curb Inlet with Adjoining Sidewalk". There will be no direct payment for this item, and it shall be subsidiary to other sidewalk bid items.

g. Curb Return Verification for Sidewalk Ramps

Where sidewalk ramp design is provided in the plans, after the construction of the adjacent curb and gutter section, and not less than one week prior to the construction of all sidewalk ramps, the contractor shall verify that the curb return elevations and the location of the depressed section is constructed in conformance with the design drawings. If the absolute elevation of any of the control points shown in sidewalk ramp drawings is not within 0.5 inches, or if the relative difference between any two control points is not within 0.125 inches, or if the depression location is not within 1 inch of the design drawings, the contractor shall either 1) remove and replace the non-compliant curb, or 2) submit a shop drawing showing how the ramp can be constructed to be ADA compliant. In the event that the original design drawings showed a ramp with elements that were not ADA compliant, the shop drawing shall show that the proposed element is as or more ADA complaint than the original design drawing. If this cannot be accomplished, the curb shall be removed and replaced.

h. Placing and Finishing Concrete

The contractor shall provide adequate tools and equipment to produce quality workmanship in placing and finishing concrete. The sidewalk and sidewalk ramps shall be finished to the top of the forms and the surface finished with a wood or steel float and surface texture shall be a course broom finish transverse to the slope of the sidewalk or sidewalk ramp. No "plastering" of the surface shall be permitted.

(1) Contraction Joints

The sidewalk surface shall be marked off into nominal squares of dimensions equal to the width of the sidewalk with a maximum distance between joints of seven feet.

All joints in formed concrete sidewalks and sidewalk ramps shall be tooled. Joints shall be tooled after brooming to provide a "picture frame" appearance. A standard joint tool having a width of one-eighth inch and one inch deep having a lip radius of one-eighth inch to one-quarter inch shall be used in forming the joints.

All joints in slip-formed concrete sidewalks shall be sawed. If sawing joints, the contractor shall begin as soon as the concrete hardens sufficiently to prevent excessive raveling along the saw cut and shall finish before conditions induce uncontrolled cracks, regardless of the time or weather.

(2) Expansion Joints

Expansion joints shall be constructed at locations where the sidewalk abuts existing concrete curbs, driveways, sidewalk ramps and similar structures, and every two hundred fifty feet and as shown on approved plans. Expansion joints shall be formed with one-half inch prefabricated non-extruding filler and shall extend the full depth of the slab.

i. Curing Concrete

Sidewalk and sidewalk ramp slabs shall be cured either by wet covering, waterproof covering, or liquid membrane-forming compound in accordance with Section 401 "Concrete Construction". The curing period shall be a minimum of five days. Curing shall be commenced as soon as possible after the finishing operation and when the concrete has set sufficiently so that it will not be damaged in the process.

j. Backfilling Concrete

Backfilling operations shall not commence prior to the completion of the five day curing period, or until the concrete attains 75% of design strength. All backfill material shall consist of soil suitable for vegetation. The area shall be prepared such that sod can be placed on bare soil.

k. Sidewalk and Sidewalk Ramp Remove and Replace Details

(1) General Requirements

Sidewalk and Sidewalk Ramps being removed and replaced shall be designed and constructed in compliance with the American with Disabilities Act of 1990, 42 U.S.C. 12101 et seq. using Public Rights of Way Accessibility Guidelines (PROWAG) as the best practice for sidewalks, sidewalk ramps, blended transitions and reach requirements.

(2) Pre-construction Meeting

The contractor shall be responsible for scheduling a pre-construction meeting at least 1 week prior to beginning removal and construction of sidewalk ramps. The time and location of the meeting shall be approved by the Project Engineer, with required attendance by the contractor's superintendent, any crew leaders responsible for setting forms for the sidewalk ramp construction, and any subcontractors (surveyors and engineers) who will be providing as-built shop drawings for field-designed ramps. The purpose of this meeting is to discuss in detail the requirements of the City to make sidewalk ramps compliant with the Americans with Disabilities Act. At this meeting the Project Engineer will review the sidewalk ramp details and the expectations of the City. The pre-construction meeting does not relieve the contractor from the requirement to make sidewalks and ramps compliant with ADA by using PROWAG as the best practice for sidewalks, sidewalk ramps, blended transitions and reach requirements.

(3) Limits

The areas of sidewalk and sidewalk ramp(s) to be removed and replaced shall be as directed by the Engineer, and sawed to provide a neat and straight joint. The Contractor will be responsible for any damage to existing sidewalk or sidewalk ramp(s) resulting from his operations beyond the limits marked or designated by the Engineer or his authorized representative, and shall satisfactorily repair any such damage at his own expense. All disturbed areas shall be restored to their original condition, which includes backfilling, sod, driveways, underground sprinkler systems, and any other items damaged by the contractor.

(4) Subgrade Preparation

Defective sidewalk, excess base materials, and tree roots shall be removed from the construction site and disposed of by the Contractor. Whenever practical, the areas to be removed will be marked at a construction or contraction joint, otherwise concrete sawing will be required to provide a neat and straight joint. Sawing at a contraction or construction joint will be required only when the joint is not of sufficient depth to provide a neat and straight break line.

After the defective sidewalk or sidewalk ramp, excess materials, and tree roots have been removed, the subgrade shall be uniformly compacted to a density equivalent to the density of the immediately surrounding undisturbed soil and evenly graded to the required subgrade elevation.

Concrete shall not be placed on frozen subgrade.

Subgrade shall be properly moistened prior to placing concrete.

(5) Grades and Slopes

The grade or slope along the length of the sidewalk repair shall be a uniform transition between ends of undisturbed sidewalk unless otherwise directed by the Engineer. Providing the existing sidewalk does not have standard cross-slope, the Contractor shall make every effort to reconstruct the sidewalk as close to or under the 2% maximum cross slope for as much of the length that it is feasible to do so. The Contractor shall construct a uniform transition, with a maximum change in cross-slope of 0.5% per lineal foot, for connections to undisturbed sidewalk.

(6) Notification of Property Owner

The Contractor shall notify each property owner whose sidewalk has been marked for removal and replacement to inform them of when the work will actually commence.

(7) Time Requirements

All sidewalk removed shall be replaced within 5 working days or one week from the time the sidewalk was removed from service. The engineer can extend this requirement based on the nature or complexity of the work. The contractor shall make necessary provisions to temporary the removed section to accommodate pedestrian traffic, wheel chair usage, and sight impaired or provide detour route in accordance with MUTCD guidelines. Temporary provisions or detour routes shall be subsidiary to other bid items. Sidewalks that have been removed and not fully reconstructed to provide adequate pedestrian use shall be completely closed to pedestrians using barriers as required.

Sidewalks shall only be closed on one side of the street at a time for streets and thoroughfares that have existing sidewalk on both sides of the street. A continuous sidewalk system shall be maintained on one side of the street for these streets throughout the sidewalk reconstruction.

(8) Sidewalk Removal Only

Some sidewalk areas may be designated in the plans for removal only. Removed sidewalk and sidewalk ramps shall include removal and disposal of all concrete and other foreign materials present, such as base rock, flowable fill, etc., to the depth of clean soil subgrade, unless otherwise designated in the plans. Removal only areas shall be backfilled and restored as per other requirements herein.

(9) Restoration

All disturbed areas shall be restored to their original condition, which includes backfilling, sod and/or seeding, driveways, underground sprinkler systems, and any other items damaged by the contractor, and shall be subsidiary to the bid items listed herein.

l. Sidewalk V-Curb

Areas where grading behind the sidewalk or sidewalk ramp is not possible, a variable height sidewalk curb (Sidewalk V-Curb) shall be constructed as part of the sidewalk or sidewalk ramp to the height matching the existing dirt grade, as shown in the plans or as directed by the Engineer. Dimensional requirements of sidewalk v-curb can be found on the Sidewalk and Sidewalk Ramp Detail sheets in the Overland Park Standard Details.

m. Detectable Warning Surface

Sidewalk ramps shall be constructed with a detectable warning surface as specified on the plans and in accordance with the Overland Park Municipal Code. The Contractor shall use cast iron detectable warning plates.

n. Construction Verification for Sidewalk Ramps

Where sidewalk ramp design is provided in the plans, the Inspector will inspect the sidewalk ramp to verify correct dimensions and slopes.

Where sidewalk ramp design is not provided in the plans, the Contractor will be responsible for designing the ramps. Once the ramp is constructed, the Contractor shall provide an as-built shop drawing to the Engineer certifying that the ramp was built in compliance with the Americans with Disabilities Act by using PROWAG as the best practice for sidewalks, sidewalk ramps, blended transitions and reach requirements. In cases where compliance is not technically feasible, the Contractor should note areas of non-compliance on the as-built and indicate the reason for non-compliance. The as-built plan shall be

sealed by a professional engineer registered in the State of Kansas. The Engineer must receive hardcopies of the as-built shop drawings with original signatures prior to final acceptance and payment of the contract. This item shall not be paid for directly, but shall be considered subsidiary to the bid item for “Sidewalk Ramp Remove and Replace”.

In either of the above cases, if the constructed ramp is not compliant with the Americans with Disabilities Act and the Engineer does not concur with the reason for noncompliance, the ramp shall be removed and reconstructed at no additional cost to the City.

824.4 MEASUREMENT AND PAYMENT

The Engineer will measure the sidewalk construction by the square foot of exposed surface of specified thickness. Final exposed area shall be that area exposed after installation and backfill operations are complete.

Payment for “Sidewalk Construction (type)” and “Sidewalk Remove and Replace (type)” at the contract unit price bid is full compensation for the specified work.

The Engineer will measure the sidewalk ramp construction and sidewalk ramp remove and replace by the final square foot of exposed surface of the entire ramp, including the detectable warning surface. Final exposed area shall be that area exposed after installation of detectable warning surfaces and backfill operations are complete.

Payment for “Sidewalk Ramp Construction” and “Sidewalk Ramp Remove and Replace” at the contract unit price bid is full compensation for the specified work.

The Engineer will measure the detectable warning surface by the square foot of exposed surface of the panel. Final exposed area shall be that area exposed after installation of detectable warning surfaces and backfill operations are complete.

Payment for “Detectable Warning Surface” at the contract unit price bid is full compensation for the specified work.

The Engineer will measure the sidewalk V-curb by the linear foot of exposed surface of the V-curb. Final exposed length shall be the length exposed after construction of all sidewalks, sidewalk ramps, and backfill is completed.

Payment for “Sidewalk V-Curb” at the contract unit price bid is full compensation for the specified work.

When the bid item of “Sidewalk Removal Only” exists in the contract, the Engineer will measure the sidewalk and sidewalk ramps designated for removal only prior to removal. When no line item exists in the contract for “Sidewalk Removal Only”, the work shall be considered subsidiary to other bid items.

Payment for “Sidewalk Removal Only” at the contract unit price bid is full compensation for the specified work.