

Americans with Disabilities Act (ADA)

Sidewalk Transition Plan

City of Columbia, Missouri

Public Works Department

2018

Revision 1: January 2019

Revision 2: January 2020

Revision 3: January 2021

Revision 4: January 2022



TABLE OF CONTENTS

Introduction	2
Sidewalk Design Specifications, Standards, and Practices	2
Public Works Street and Sidewalk Improvements in Right-of-Way	4
Inventory of Existing Sidewalk within Street Right of Way	6
Inventory Information to be Collected for Each Structure Type	7
Improvement Plan to Address ADA Compliance	8
Officials Responsible for Plan Implementation	10
Grievance Procedure	10
Public Involvement and Transition Plan Revisions	12

Appendices

- A. City's Street, Storm, Drain and Sanitary Sewer Standard Details for Sidewalks
- B. MoDOT ADA Checklist
- C. City's Complete Streets and Complete Intersection Policy
- D. Completed Curb Ramps Improvements
- E. Completed Roadway Improvement Projects
- F. Completed Sidewalk Improvement Projects
- G. Completed Signalized Pedestrian Crossings Improvement Projects
- H. Completed Bus Shelter Installation Projects
- I. Inventory and Priority Order Diagrams
- J. Inventory Checklists and Rankings
- K. Inventory Summary
- L. Proposed *Correction Recommended* Structures on City Properties, Signalized Pedestrian Crossings, and Bus Shelters
- M. Proposed CIP Projects that include Pedestrian Facility Improvements
- N. Proposed Curb Ramp Improvements Associated with Asphalt Overlay Projects
- O. Proposed Bus Shelter Installation Projects
- P. ADA Discrimination Complaint Form

Introduction:

The City of Columbia (City) is committed to providing services, programs and activities that are accessible to all members of the community, regardless of disability status. The purpose of this sidewalk transition plan is to focus on the accessibility of pedestrian facilities within the public right-of-way, such as sidewalks, curb ramps, signalized pedestrian crossings, and bus shelters. The plan is enacted in furtherance of the City's obligations under Title II of the Americans with Disabilities Act (ADA) and follows the 2005 Public Right of Way Accessibility Guidelines (PROWAG).

The City is working to improve the existing accessibility within the right-of-way through maintenance and capital improvement projects. This plan discusses the procedures the City has in place for new construction of sidewalks and for the improvement of any known existing deficient sidewalks. In addition, this plan outlines how the City inventories the existing sidewalk network for ADA compliance and outlines how improvements will be prioritized from that inventory to make the existing sidewalk network more accessible. Finally, this plan provides the names of the officials responsible for implementation of the plan and outlines the City's grievance procedure.

This ADA Sidewalk Transition Plan is administered by the City's Public Works department. Improvements are completed through the City's Capital Improvement Program (CIP) and the City's maintenance projects. The ADA Sidewalk Transition Plan will be used in conjunction with the Sidewalk Master Plan, which was last updated in 2012, as guidance to prioritize sidewalk improvement projects to be funded by the City. This sidewalk transition plan will be updated annually.

The ADA Sidewalk Transition Plan aligns with Public Works' Mission and Vision statements. The Public Works' Mission is to provide safe, sustainable infrastructure that promotes positive communities. The Public Works' Vision is to provide a safe, sustainable, and connected community.

Sidewalk Design Specifications, Standards, and Practices:

The City's sidewalk design specifications, standards, and practices are aligned to provide accessible pedestrian facilities that meet or exceed minimum ADA standards. In order to ensure it meets this goal, the City has adopted, and incorporated, accessible elements of design for the sidewalks, curb ramps and intersections in the following documents: (1) the City of Columbia Street, Storm Drain and Sanitary Sewer Specifications and Standards; (2) the ADA compliance checklist; (3) the City's Complete Street and Complete Intersection policies; and (4) the City's Vision Zero policy.

City's Street, Storm, Drain and Sanitary Sewer Specifications and Standards: The City of Columbia Street, Storm Drain, and Sanitary Sewer Specifications and Standards were adopted in 2004 and then were significantly revised in January of 2012 and then updated again in October of 2016. An addendum revising various specifications and standard details was issued in October of 2018. A second addendum was issued in July of 2020. These specifications and standards include details for the design and construction of sidewalks and curb ramps to ensure ADA compliance. Adherence to the specifications and standards is required for both the City improvement projects and private development. The current typical standard details for sidewalks are included in Appendix A of this document.

ADA Checklist: The Missouri Department of Transportation (MoDOT) ADA checklist is also used by the City as reference during the design and construction of sidewalks, intersections, curb ramps, and bus shelters for Public Works projects. For CIP projects, this checklist is included as an exhibit to the bid document for the Bidder's review and compliance. The checklist outlines ADA requirements from the Public Right-of-Way Accessibility Guidelines (PROWAG) for pedestrian access routes, entrances, edge protection, hand rails and pedestrian guardrails, stairways, unobstructed reach ranges, curb ramps, detectable warning devices, islands and medians, accessible pedestrian signals, pedestrian street crossings, alternate circulation path, and bus boarding and alighting areas. The ADA checklist is included as Appendix B of this document.

City's Complete Streets and Complete Intersection Policies: The term "complete streets" refers to a transportation network design that allows for safe and convenient travel along and across streets for all modes of transportation, including pedestrians, bicyclists, persons with disabilities, motorists, movers of commercial goods, public transportation, and emergency response services. The City Council adopted the complete streets philosophy through the City's street specifications and standards in which ADA compliant sidewalks are included in the design of new streets. The Columbia Area Transportation Study Organization (CATSO) adopted a complete streets policy in September of 2014. In December 2015, City Council recommended to include the "complete intersections" philosophy as part of the transportation network improvements. The complete intersections philosophy encompasses designing intersections to accommodate all modes of travel including crosswalks which are accessible by persons with disabilities. This legislation is included in Appendix C.

City's Vision Zero Policy: The City Council adopted the Vision Zero policy in December 2016. Vision Zero is a transportation policy goal to achieve zero traffic deaths or serious injuries on the City's roadways by the year 2030. Vision Zero considers all road users and values the safety of people traveling by city streets whether by foot, bicycle, wheelchair, motorcycle, automobile, public transit, or any other mode. It prioritizes the safety of vulnerable road users, such as people walking, because of the likelihood of

becoming seriously injured or killed in a collision. The City is currently working through the process to implement the Vision Zero policy through engineering, education, and enforcement. The engineering component identifies design parameters that improve safety for all road users, including people with disabilities.

Public Works Street and Sidewalk Improvements in Right-of-Way:

In its regular course of operation, the City's Public Works department completes street and sidewalk improvement projects in the right-of-way. These improvements include asphalt overlays, roadway reconstruction, sidewalk improvements, signalized crossing improvements, and bus shelter installations. For all new curb ramps and sidewalk facilities, the City will construct these to be compliant with the ADA standards. For all existing curb ramps and sidewalks, the City will evaluate their compliance of accessibility upon construction or alteration to the facilities or their adjacent streets. The following outlines various types of Public Works projects that include improvements to existing structures within the right-of-way in order to meet ADA standards.

Asphalt Overlays:

As Public Works completes asphalt overlay projects, curb ramps touching the overlay area are reconstructed if they do not meet ADA standards. Work that only extends to one corner of the intersection requires that only the curb ramps on that side of the intersection be replaced if the curb ramps do not meet ADA standards.

Public Works implements a pavement preservation plan which includes yearly asphalt overlays. The asphalt overlays are completed over the summer and any adjacent non-compliant curb ramps are usually then replaced over the following fall and winter. The Public Works' budget has a line item each year to fund the replacement of the curb ramps adjacent to the street segments that were overlaid. A list of the curb ramps that were replaced in conjunction with the road segments that have been overlaid since 2015 is located in [Appendix D](#).

Roadway Reconstruction:

When Public Works competes roadway reconstruction projects, curb ramps within the reconstruction area are reconstructed as well, if they do not meet ADA standards. Also, for roadway reconstruction, new sidewalks are constructed where no sidewalk exists. Finally, any sidewalk that is determined unusable along the roadway reconstruction section is replaced.

Public Works follows their CIP Planning Document to prioritize and fund roadway reconstruction projects. The CIP Planning Document is updated each fiscal year and the roadway reconstruction projects are listed and funded as individual CIP projects. A list of CIP roadway projects that were completed since 2015 is located in [Appendix E](#).

Sidewalk Improvements:

Sidewalk improvements include constructing sidewalk where there are gaps along the sidewalk network and repairing existing sidewalk panels that are deficient.

Public Works follows their Council approved CIP Planning document to prioritize and fund sidewalk projects. The CIP projects are funded through the Annual Sidewalks funding source and various other grant funds. Public Works maintenance crews also complete sidewalk ramp and panel repairs using their annual operations budget. When utility companies impact sidewalks, whether through new installation or repair to existing facilities, they are required to repair the sidewalk to ADA standards, as well. A list of the CIP sidewalk projects that were completed since 2015 is located in [Appendix F](#).

Signalized Pedestrian Crossing Improvements:

Public Works follows their Council approved CIP Planning document to prioritize and fund signalized pedestrian crossing improvement projects. These include both crossing at signalized intersections and mid-block crossings. These are usually high pedestrian volume signalized locations that do not have pedestrian facilities and improvements include crosswalks, safety islands, pedestrian signalization, and sidewalks. These items are designed and constructed to meet ADA standards. The projects are listed and funded as individual CIP projects or as part of a larger project. A list of signalized pedestrian crossing improvement projects that were completed since 2015 is located in [Appendix G](#).

Bus Shelter Installations:

Public Works has a list of all current bus shelter locations. The bus shelter pads are designed and constructed to meet ADA standards. In addition, sidewalks and crosswalks connecting to the bus shelters and bus stops are being prioritized for reconstruction if they do not currently meet ADA standards and are high use locations for paratransit customers. A list of bus shelter pads that have been constructed or improved since 2016 is located in [Appendix H](#).

Inventory of Existing Sidewalk within Street Right of Way:

General. The City's Geographic Information System (GIS) division has mapped nearly all of the City's existing sidewalks, curb ramps, signalized intersections, and bus shelters. There is approximately 3,500,000 linear feet of sidewalk within the City's street right-of-way, street easement, or sidewalk easement. Sidewalks located along Missouri Department of Transportation (MoDOT) right of way and sidewalks located along private roads are not included in this estimate.

Inventory and Priority Order. As part of this transition plan, the City is inventorying its sidewalks, curb ramps, signalized intersections, and bus shelters (pedestrian facilities) and evaluating them for accessibility. The order in which the pedestrian facilities are inventoried and evaluated is as follows:

1. City owned properties. **(completed)**
2. The following locations of high pedestrian use, particularly by people with disabilities: **(completed)**
 - a. East Campus/Benton-Stephens neighborhoods
 - b. Downtown
 - c. Worley Street between Providence and Stadium
3. Locations called in from concerned citizens. **(on going)**
4. Specific locations identified as a priority for pedestrians with disabilities. **(on going)**
5. Locations identified by Paratransit to enable persons with disabilities to access existing bus stops. **(Paratransit completed a survey of its customers to determine locations where they would like to utilize existing bus stops. This information was going to be used to prioritize sidewalk inventory and repairs at those locations. The survey was completed in the fall/winter of 2020, but at that time current paratransit users responded that they would prefer to use the paratransit service instead of the regular bus service, even if they have good sidewalk access to the bus stops.)**
6. Other locations of high pedestrian use including schools, shopping areas, etc.
7. Locations of lower pedestrian use and remainder of City by subdivision.

Diagrams of areas inventoried are located in Appendix I.

Inventory Process. To inventory pedestrian facilities, Public Works staff uses an iPad to input particular features of each facility and then determines an accessibility ranking. A summary of the checklists used and a breakdown of the ranking are located in Appendix J. The following summarizes the information to be collected for each structure type.

Inventory Information to be Collected for Each Structure Type:

Sidewalks and Driveways:

- Sidewalk width
- Sidewalk cross slope (average of entire section)

Curb Ramp:

- Curb ramp width
- Curb ramp running slope
- Curb ramp cross slope
- Obstruction within the curb ramp
- Detectable warning

Pedestrian Crossing (Signalized or Flashing Beacon):

- Signal Type (Signalize Intersection or Pedestrian Flashing Beacon)
- Crosswalk orientation
- Accessible Pedestrian Signal (APS) (Only required on new installations)
- Push button location (height and distance from user)

Bus Shelters:

- Alighting area dimensions
- Alighting cross slope
- Bus shelter pad dimension

Obstructions:

(Non-compliant spot locations in sidewalk and driveway network)

- Noticeable cracks or gaps (horizontal trip hazard)
- Noticeable heaving or sinking (vertical trip hazard)
- Permanent obstruction in sidewalk
- Temporary obstruction protruding or hanging in the sidewalk
- Excessive concrete panel cross slope or running slope

The structures are inventoried following the Inventory and Priority Order and assessed for ADA compliance. This information is then utilized to prioritize repairs. The following rankings (Table 1) are used for each structure type to determine compliance. A breakdown of the ranking system used is shown in Appendix J. Structures that are ranked as *Compliant* will not be further evaluated. Structures that are ranked as *Substantially Compliant* will be considered the lowest priority. Structures that are

ranked as *Correction Recommended* will further be reviewed in more detail and prioritized for improvement.

Table 1: Structure Ranking for ADA Compliance

<i>Structure Type</i>	<i>Ranking</i>		
	<i>Compliant</i>	<i>Substantially Compliant</i>	<i>Correction Recommended</i>
<i>Sidewalk/Driveway</i>	0	1 to 4	5 to 10
<i>Curb Ramp</i>	0	1 to 4	5 to 25
<i>Pedestrian Crossing</i>	0	1	2 to 3
<i>Bus Shelters</i>	0	1 to 4	5 to 25
<i>Obstructions</i>	See Appendix J for Ranking		

A summary of the rankings for the structures inventoried is located in [Appendix K](#). This appendix will be updated yearly to add areas that have been evaluated throughout the year. Also, an interactive map has been developed that can query and locate the inventoried structures.

An estimated cost was developed for repair of the structures ranked as *Correction Recommended*. It should be noted that the estimate is very general. An average cost of \$1,300 per curb ramp, \$800 per obstruction, \$6,500 per driveway, and \$5,500 per sidewalk. A total estimated repair cost for structures ranked as *Correction Recommended* is \$5,726,700. [Appendix K](#) has additional information on the estimated cost.

Improvement Plan to Address ADA Compliance:

Public Works will review all structures that received a ranking of *Correction Recommended* to determine priority and funding sources for improvement.

Priority of Improvements. The priority of improvements will be determined by Public Works in a manner consistent with this policy. Factors to consider in determining priority include the location of the facility, the type of improvement required, the cost of the improvement and available funding, alternative pedestrian routes available in the immediate area, and improvement projects already scheduled within the area.

Funding Sources. The source for funding of improvements under this section may vary depending on the type and location of the facility. The City will be responsible for all

improvements to structures located on City property, curb ramps, bus shelters, and signalized pedestrian crossings. Per the City's Code of Ordinances Sections 24-12 and 24-33, it is the responsibility of adjacent landowners for the upkeep and repair to sidewalks on their property. Public Works is developing a cost share program to assist private property owners with sidewalk repairs.

The City's funding source for improvements under this Plan will primarily come from the 0.25 percent CIP sales tax. This tax is subject to voter approval every ten years. Within the CIP sales tax, the structure improvements may be funded through one of the following designated sources:

- Sidewalk Improvements: Annual Sidewalk Major Maintenance and Annual Sidewalk/Pedways
- Curb Ramps Improvement: Annual ADA Curb Ramp Installations
- Intersections Improvement: Identified Capital Improvement Projects
- Bus Shelter Improvements: Annual Bus Shelters

Additional funding sources for improvements by the City under this plan may include non-motorized transportation grants or community development block grants.

Tracking Improvements. Each of the following appendices includes a list of proposed improvements to be completed. The appendices will be updated each year with any revisions to the list of proposed improvements based on additional inventory information and a list of improvements that have been completed since the original drafting of this document.

- Appendix L includes the list of structures that are inventoried and ranked as *Correction Recommended* on City properties. The appendix also includes the list of bus shelters and signalized pedestrian crossings that are ranked as *Correction Recommended*.

The improvements are divided by City department and include the repairs with an estimated cost. The total estimated cost for sidewalk repairs on City properties is \$345,000.

- Appendix M includes the list of CIP projects that include sidewalk, curb ramp, intersection, and/or bus shelter improvements as part of the project. These CIP projects may be within or outside of an inventoried area and these improvements are usually part of a larger project scope, such as a street reconstruction project. The CIP project list includes the location of the project and the year the project will be constructed.

- Appendix N includes the list of curb ramps that need to be modified to meet ADA compliance associated with the asphalt overlay projects. The list includes the location of the project and the number of curb ramps to be improved. These locations may be within or outside of an inventoried area.
- Appendix O includes the list of bus shelter projects to be completed. The list includes the location of each shelter and the year the pad is scheduled to be constructed.

Officials Responsible for Plan Implementation:

The Public Works Director is responsible for the implementation of the sidewalk transition plan. The City's ADA Coordinator is also available for any comments, questions, or concerns related to this transition plan or the accessibility of the City's services, programs, or activities.

The Public Works Director's contact information is:

Shane Creech, P.E.
Interim Director of Public Works
701 E. Broadway
Columbia, Missouri 65205-6015
Phone: (573) 874-CITY (2489)
Email: pubw@como.gov

The ADA Coordinator's contact information is:

Adam Kruse
ADA Coordinator
701 E. Broadway
Columbia, Missouri 65205-6015
Phone: (573) 874-CITY (2489)
Email: disabilityservices@como.gov

Grievance Procedure:

The City of Columbia has adopted a grievance procedure providing for prompt and equitable resolution of complaints alleging any action prohibited by the U.S. Department of Justice regulations implementing Title II of the Americans with Disabilities Act. Title II states, in part, that "no qualified individual with a disability shall, by reason of such

disability, be excluded from the participation in or be denied the benefits of services, programs, or activities of a public entity, or be subjected to discrimination by any such entity.”

The established grievance procedure is as follows:

1. A complaint shall be filed in writing and shall contain the name and address of the person filing it together with a brief description of the violation(s) alleged.
2. A complaint should be filed within 14 days of when the complainant becomes aware of the alleged violation. (Processing of allegations of discrimination occurring before this written grievance procedure was in place shall be considered on a case-by-case basis.)
3. An investigation, when deemed appropriate, shall follow the filing of a complaint. The investigation shall be conducted by the ADA Coordinator or his/her designee. These rules contemplate informal, but thorough investigations, affording all interested persons and their representatives, if any, an opportunity to submit evidence relevant to a complaint.
4. A written determination as to the validity of the complaint and a description of the resolution, if any, shall be issued by the ADA Coordinator and a copy shall be forwarded to the complainant no later than 14 business days after its filing. In the event a complex issue arises that requires additional review, the response time may be extended beyond 14 days.
5. The ADA Coordinator shall maintain the files and records of the City of Columbia relating to the complaints filed.
6. The complainant may request reconsideration of their case in instances where he or she is dissatisfied with the resolution. The request for reconsideration should be made, within 14 days of the issuance of the ADA Coordinator’s written resolution, to the City Manager.
7. The right of a person to a prompt and equitable resolution of the complaint filed hereunder shall not be impaired by the person’s pursuit of other remedies such as the filing of an ADA complaint with the responsible federal department or agency. Use of this grievance procedure is not a prerequisite to the pursuit of other remedies.
8. These rules shall be construed to protect the substantive rights of interested persons to meet appropriate due process standards and to assure that the City of Columbia complies with the ADA and implementing regulations.

The Discrimination Complaint Form is included in Appendix P. All complaints should be addressed to the City of Columbia's ADA Coordinator at the following contact information:

Adam Kruse
ADA Coordinator
701 E. Broadway, 2nd Floor
P.O. Box 6015
Columbia, Missouri 65205-6015
Phone: (573) 874-CITY (2489)
Email: disabilityservices@como.gov

Public Involvement and Transition Plan Revisions:

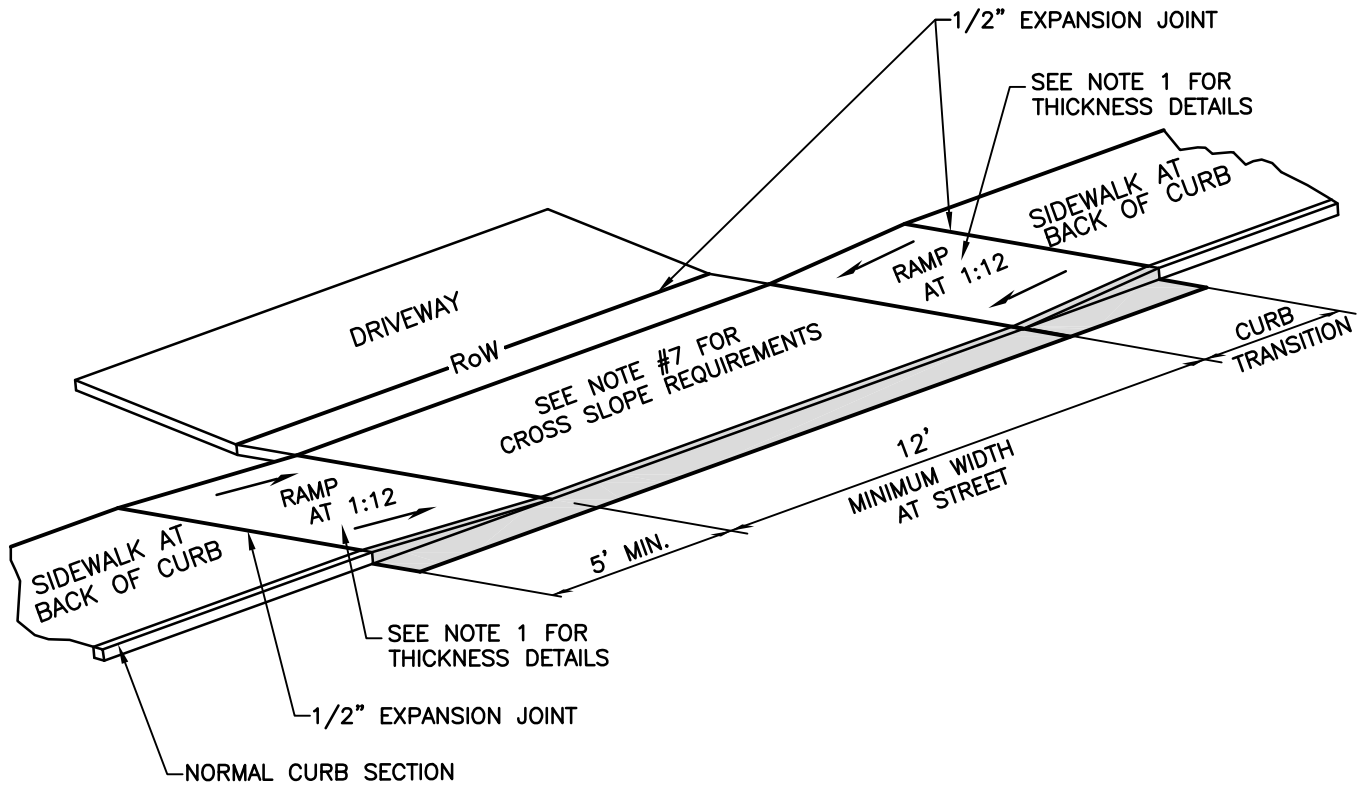
In developing the initial transition plan, the Disabilities Commission, the Bicycle/Pedestrian Commission, and the Public Transit Advisory Commission were contacted to provide comments on the draft report. Their comments were incorporated into the plan. Public Works met with the Disabilities Commission on February 8, 2018, with the Bicycle/Pedestrian Commission on February 21, 2018, and with the Public Transit Advisory Commission on March 15, 2018. The transition plan was presented to City Council by a Staff report on April 16, 2018.

This transition plan is updated yearly. Each update will include the improvement projects that have been completed for the year, structure inventories that were completed for the year, and the updated list of the improvement projects that still need to be completed with target years for the improvements. Both City Council and the Disabilities Commission asked for an update on the plan once it had been implemented; therefore, the January 2019 updated transition plan was presented to City Council at a work session on June 3, 2019 and to the Disabilities Commission on July 11, 2019. The inventory, evaluation, and how to prioritize and fund improvements were discussed.

Appendices

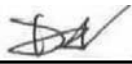
- A. City's Street, Storm, Drain and Sanitary Sewer Standard Details for Sidewalks
- B. MoDOT ADA Checklist
- C. City's Complete Streets and Complete Intersection Policy
- D. Completed Curb Ramp Improvements
- E. Completed Roadway Improvement Projects
- F. Completed Sidewalk Improvement Projects
- G. Completed Signalized Intersection Improvement Projects
- H. Completed Bus Shelter Installation Projects
- I. Inventory and Priority Order Diagrams
- J. Inventory Checklist and Rankings
- K. Inventory Summary
- L. Proposed *Correction Recommended* Structures on City Properties, Signalized Pedestrian Crossings, and Bus Shelters
- M. Proposed CIP Projects that include Pedestrian Facility Improvements
- N. Proposed Curb Ramp Improvements Associated with Asphalt Overlay Projects
- O. Proposed Bus Shelters Installation Projects
- P. ADA Discrimination Complaint Form

Appendix A: City's Street, Storm Drain, and Sanitary Sewer Standard Details for Sidewalks
Revised: January 2021



NOTE:

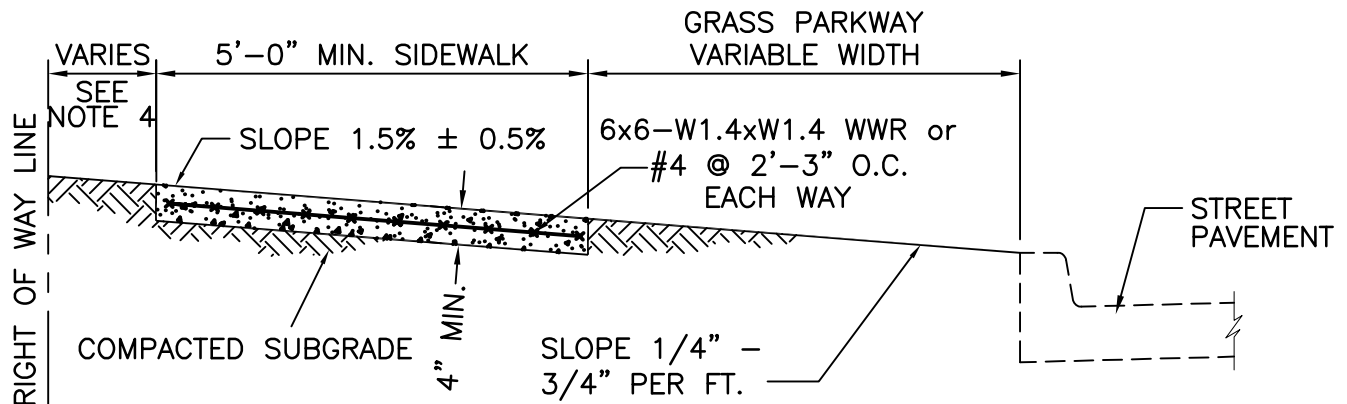
1. RAMP SHALL BE 6" THICK MoDOT PAVEMENT CONCRETE FOR RESIDENTIAL, 7" THICK MoDOT PAVEMENT CONCRETE FOR COMMERCIAL.
2. EXPANSION JOINT SHALL BE 1/2" PREFORMED CORK OR BITUMINOUS EXPANSION JOINT MATERIAL.
3. DRIVEWAY CROSS SLOPE SHALL NOT EXCEED 2.00%.
4. ALL SLOPES ARE MEASURED FROM THE HORIZONTAL.
5. REPLACE STANDARD CURB SECTION DRIVEWAY CURB SECTION - DETAIL 400.02 OR 400.03
6. RAMP LENGTH IS DEPENDENT UPON 1:12 MAX. SLOPE AT 5' MINIMUM TRANSITION AREA. USE FLATTER WHEN POSSIBLE.
7. A PEDESTRIAN ACCESSIBLE ROUTE SHALL BE PROVIDED THAT IS 4'-0" WIDE MINIMUM WITH A CROSS SLOPE OF 1.5% $\pm$ 0.5% (MAXIMUM CROSS SLOPE OF 2.0%).
8. DRIVEWAY MAY BE REINFORCED AT OWNERS OPTION. ON CITY BID PROJECTS DO NOT REINFORCE.

	07/01/20
Approved	Date
Revisions	



SIDEWALK DRIVEWAY DETAIL
Sidewalk at Back of Curb

410.07



SIDEWALK WITH GRASS PARKWAY

NOTE:

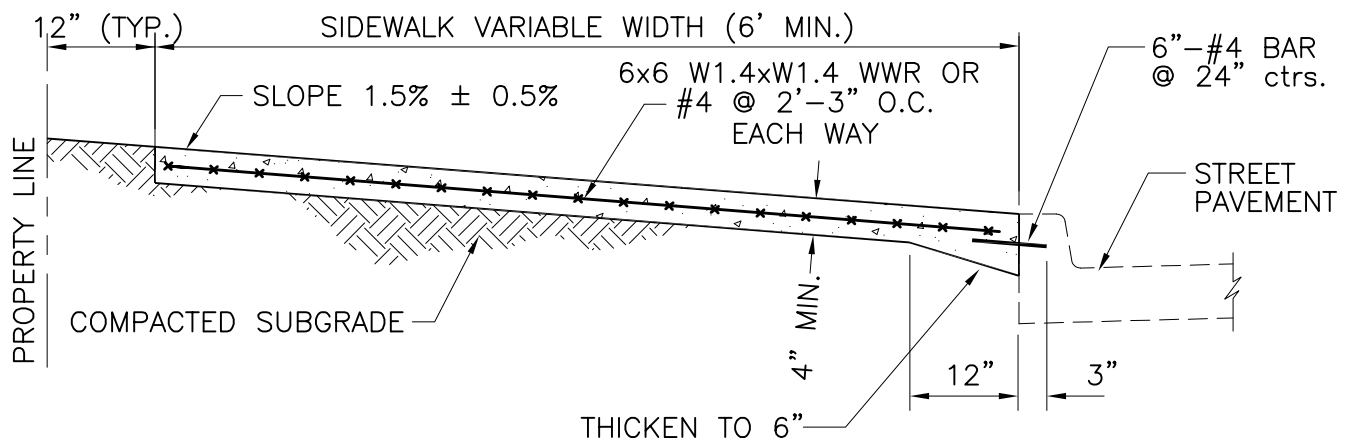
1. SIDEWALK SHALL BE 4" THICK MoDOT PAVEMENT CONCRETE.
2. INSTALL 1/2" EXPANSION JOINTS AT INTERSECTIONS, RAMPS, STRUCTURES, DRIVEWAY APPROACHES, OR EVERY 100'.
3. INSTALL TRANSVERSE SAW JOINTS AT SPACING EQUAL TO SIDEWALK WIDTH.
4. STANDARD SIDEWALK PLACEMENT IS 12" FROM RIGHT OF WAY LINE.
5. NO STEEL TO BE PLACED THROUGH EXPANSION JOINT.
6. SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2.00%.
7. DAMAGED SIDEWALK MUST BE PINNED TO EXISTING SIDEWALK.
8. WWR OR REBAR SHALL BE ACCURATELY PLACED AND FIRMLY HELD IN PLACE DURING CONCRETE PLACEMENT BY APPROVED METHODS, SEE SECTION 238.9.

 Approved	07/01/20 Date
Revisions	



SIDEWALK

420.01



NOTE:

1. SIDEWALK SHALL BE 4" THICK MoDOT PAVEMENT CONCRETE.
2. INSTALL 1/2" TRANSVERSE EXPANSION JOINTS TO MATCH STREET OR CURB AND GUTTER EXPANSION JOINTS AND AT ALL DRIVEWAY APPROACHES, AND SIDEWALK RAMPS.
3. INSTALL TRANSVERSE SAW JOINTS AT SPACING EQUAL TO SIDEWALK WIDTH.
4. FOR DOWNTOWN SIDEWALK DETAIL SEE SECTION 1000.
5. NO STEEL TO BE PLACED THROUGH EXPANSION JOINT
6. SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2.00%.
7. NEW SIDEWALK MUST BE PINNED TO EXISTING SIDEWALK.
8. WWR OR REBAR SHALL BE ACCURATELY PLACED AND FIRMLY HELD IN PLACE DURING CONCRETE PLACEMENT BY APPROVED METHODS, SEE SECTION 238.9.

[Signature]

Approved

07/01/20

Date

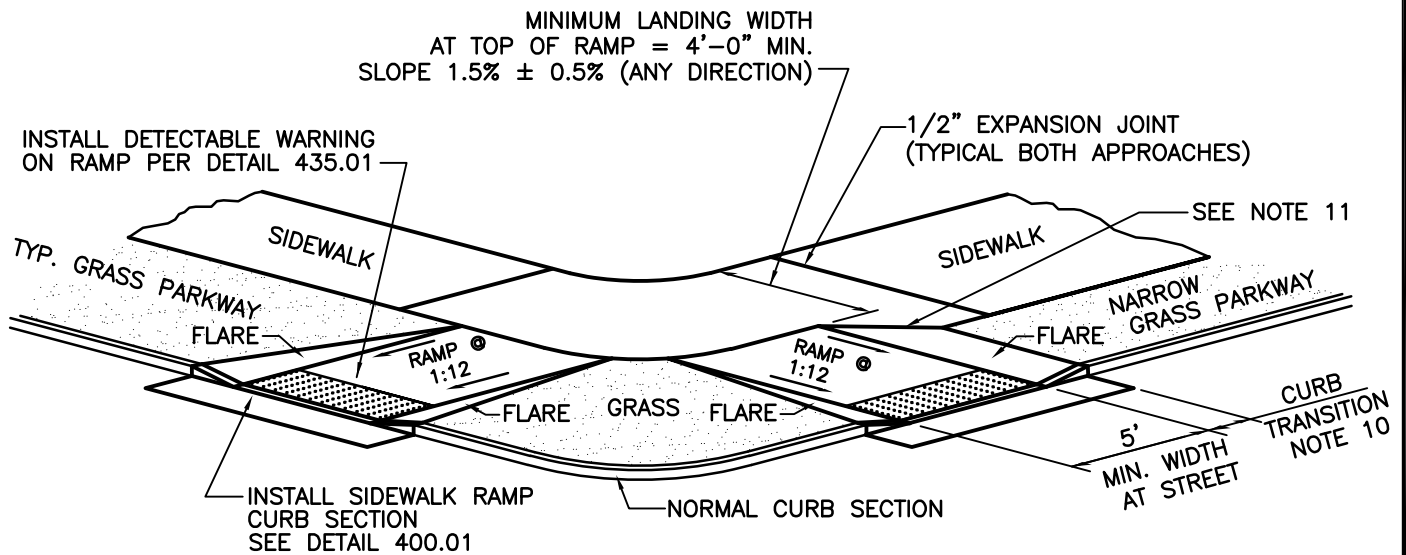
Revisions



City of Columbia
Public Works Department

SIDEWALK AT BACK OF CURB

420.02



NOTE:

1. RAMP SHALL BE 6" THICK MoDOT PAVEMENT CONCRETE WITH #4 BARS @ 12" O.C. EACH WAY.
2. EXPANSION JOINT SHALL BE 1/2" PREFORMED CORK OR BITUMINOUS EXPANSION JOINT MATERIAL.
3. MAXIMUM RAMP CROSS SLOPE IS 2.00%.
4. ALL SLOPES ARE MEASURED FROM THE HORIZONTAL.
5. REPLACE STANDARD CURB SECTION WITH SIDEWALK RAMP CURB SECTION - DETAIL 400.01
6. RAMP LENGTH IS DEPENDENT ON 1:12 MAX. SLOPE. USE FLATTER WHEN POSSIBLE.
7. LANDING AREA AT TOP OF RAMP SHALL BE 4'-0" MIN WIDTH, CROSS SLOPE OF LANDING SHALL NOT EXCEED 2.00%, INCREASE SIDEWALK RADIUS TO OBTAIN MINIMUM 4'-0" LANDING.
8. TYPE "A" RAMP NOT APPLICABLE IF SIDEWALK AND PARKWAY WIDTH DOES NOT PROVIDE 4'-0" LANDING AT TOP OF RAMP.
9. FLARES ARE REQUIRED AT RAMPS TO KEEP GRASS PARKWAY SLOPES IN CONFORMANCE WITH THE TYPICAL CROSS SECTION.
10. CURB TRANSITION LENGTH IS DEPENDENT ON FLARE SLOPE
11. IF RAMP EXTENDS INTO NORMAL SIDEWALK, FLARE SLOPE MUST NOT EXCEED 1:10. A LANDING IS REQUIRED, SEE NOTE 7.


Approved

07/01/20
Date

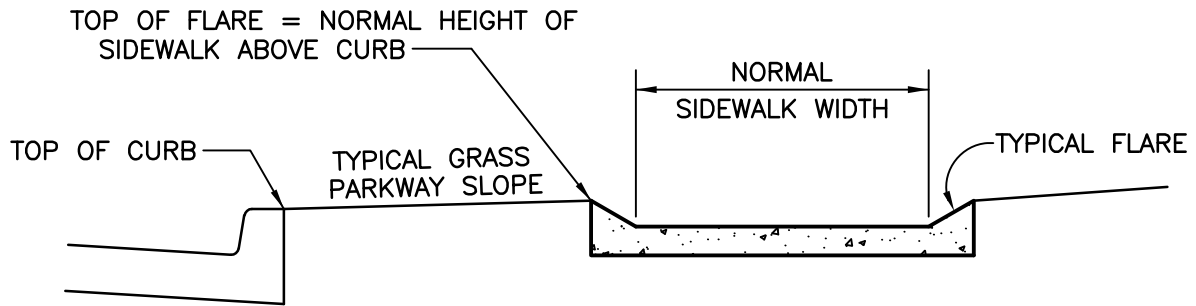
Revisions



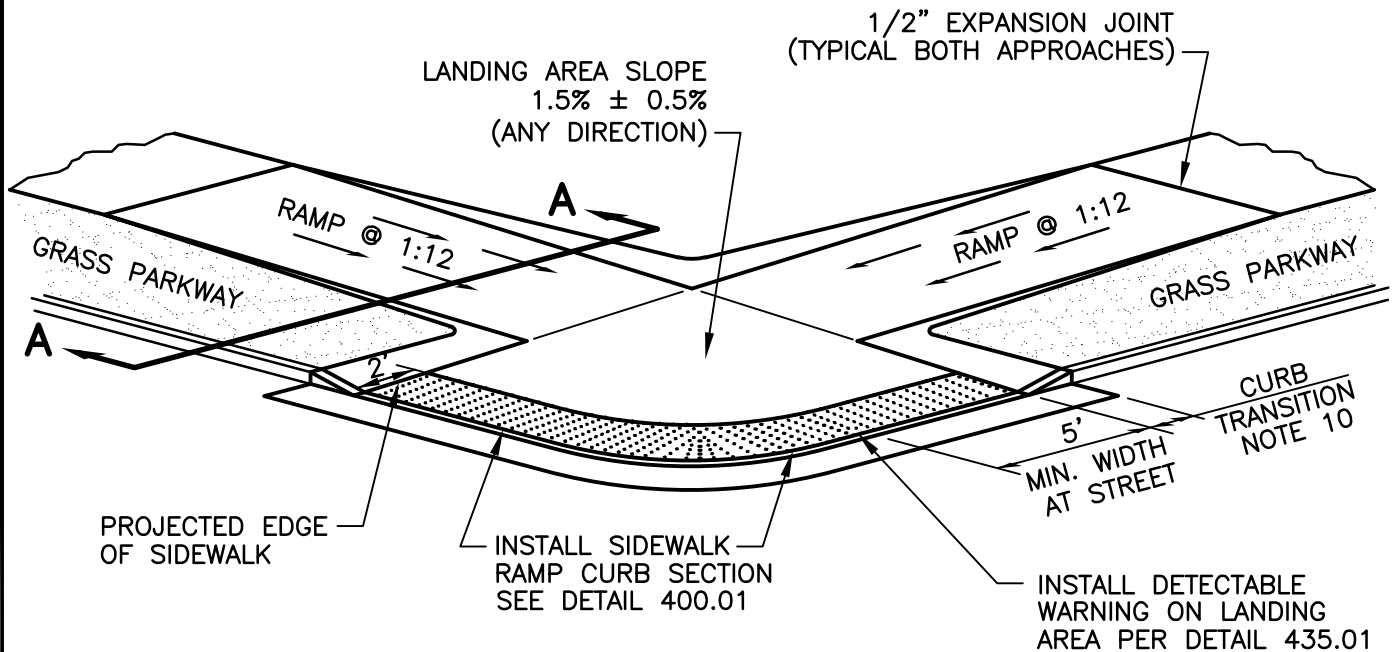
City of Columbia
Public Works Department

SIDEWALK RAMP
Sidewalk with Grass Parkway
(Type A)

430.01



SECTION A-A



NOTES:

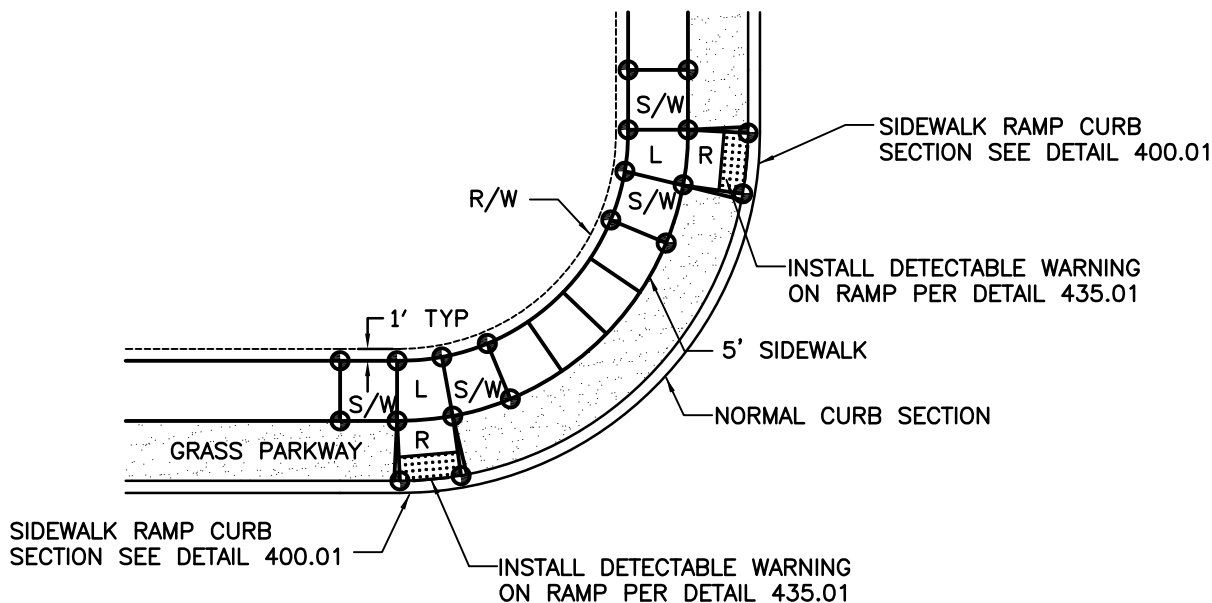
1. RAMP AND LANDING SHALL BE 6" THICK MoDOT PAVEMENT CONCRETE WITH #4 BARS AT 12" O.C. E.W.
2. EXPANSION JOINT SHALL BE 1/2" PREFORMED CORK OR BITUMINOUS EXPANSION JOINT MATERIAL.
3. MAXIMUM RAMP CROSS SLOPE IS 2.00%.
4. ALL SLOPES ARE MEASURED FROM THE HORIZONTAL.
5. REPLACE STANDARD CURB SECTION WITH SIDEWALK RAMP CURB SECTION – DETAIL 400.01
6. RAMP LENGTH IS DEPENDENT ON 1:12 MAX. SLOPE. USE FLATTER WHEN POSSIBLE.
7. LANDING AREA SHALL BE 4'-0" MIN WIDTH. MAXIMUM RAMP SLOPE 2.0% ANY DIRECTION.
8. USE TYPE "B" RAMP ONLY IF TYPE "A" IS NOT FEASIBLE.
9. FLARES ARE REQUIRED AT RAMPS TO KEEP GRASS PARKWAY SLOPES IN CONFORMANCE WITH THE TYPICAL CROSS SECTION. (SEE SECTION A-A)
10. CURB TRANSITION LENGTH IS DEPENDENT ON FLARE SLOPE.

	07/01/20
Approved	Date
Revisions	



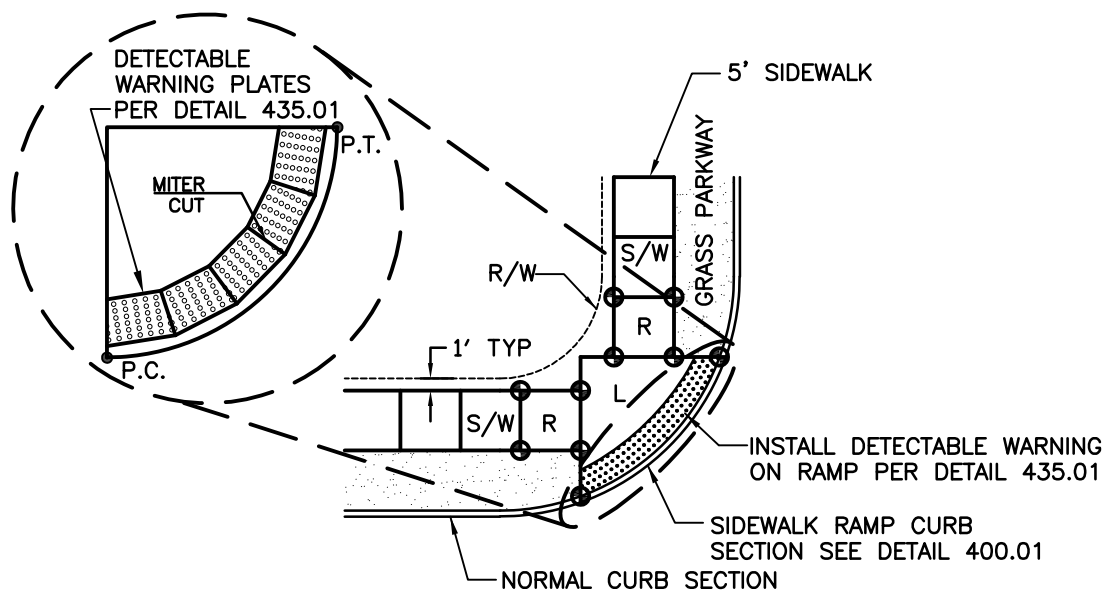
SIDEWALK RAMP
Sidewalk with Grass Parkway
(Type B)

430.02



1. ① DENOTES SPOT ELEVATION REQUIRED

TYPE "A" SIDEWALK WITH GRASS PARKWAY



1. ① DENOTES SPOT ELEVATION REQUIRED

2. DETECTABLE WARNING PLATES ARE TO BE MITERED EQUALLY ON BOTH SIDES TO BE FLUSH.

TYPE "B" SIDEWALK WITH GRASS PARKWAY

R = RAMP RUNNING SLOPE 1:12 (8.3%) MAXIMUM

L = LANDING SLOPE 1.5% $\pm$ 0.5% (2.0% SLOPE MAXIMUM ANY DIRECTION)

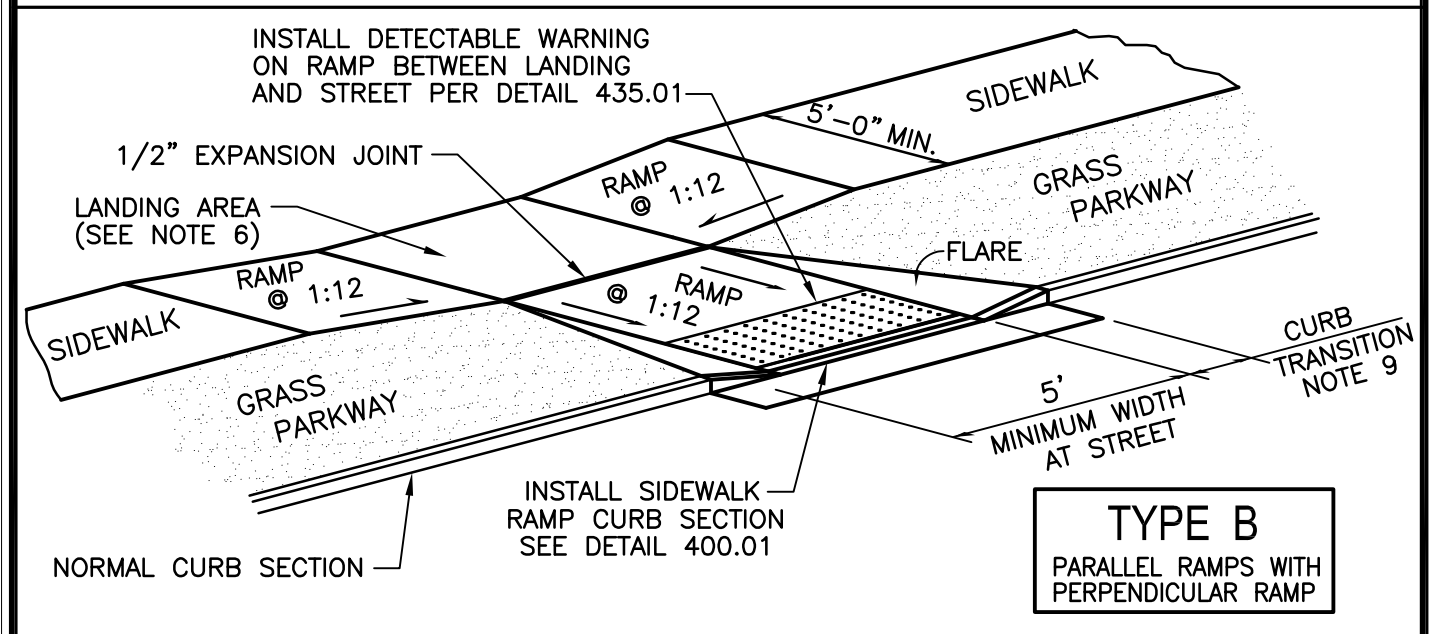
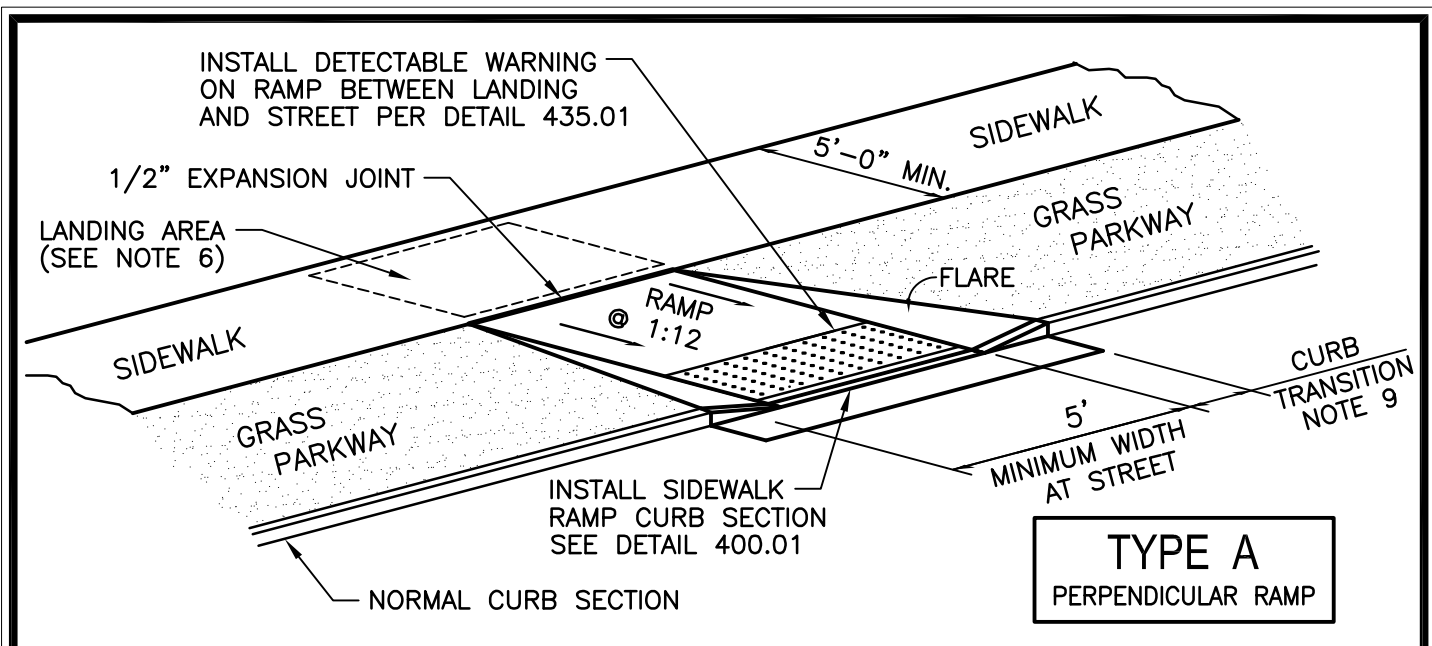
S/W = SIDEWALK CROSS SLOPE 1.5% $\pm$ 0.5% (2.0% CROSS SLOPE MAXIMUM)

	07/01/20
Approved	Date
Revisions	



SIDEWALK RAMP PLAN VIEW
Sidewalk with Grass Parkway
(Type A & B)

430.03



NOTE:

1. RAMP SHALL BE 6" THICK MoDOT PAVEMENT CONCRETE WITH #4 BARS AT 12" O.C. EACH WAY
2. EXPANSION JOINT SHALL BE 1/2" PREFORMED CORK OR BITUMINOUS EXPANSION JOINT MATERIAL.
3. ALL SLOPES ARE MEASURED FROM THE HORIZONTAL.
4. REPLACE STANDARD CURB SECTION WITH SIDEWALK RAMP CURB SECTION - DETAIL 400.01
5. RAMP LENGTH IS DEPENDENT ON 1:12 MAX. SLOPE. USE FLATTER WHEN POSSIBLE.
6. LANDING AREA AT TOP OF RAMP SHALL BE 4'-0" MIN. WIDTH. SLOPE OF LANDING SHALL BE 1.5% ± 0.5% (2.0% MAXIMUM ANY DIRECTION).
7. TYPE "A" RAMP NOT APPLICABLE IF PARKWAY WIDTH DOES NOT PROVIDE ENOUGH LENGTH FOR PERPENDICULAR RAMP AT 1:12 SLOPE.
8. FLARES ARE REQUIRED AT RAMPS TO KEEP GRASS PARKWAY SLOPES IN CONFORMANCE WITH THE TYPICAL CROSS SECTION.
9. CURB TRANSITION LENGTH IS DEPENDENT ON FLARE SLOPE.


Approved

07/01/20
Date

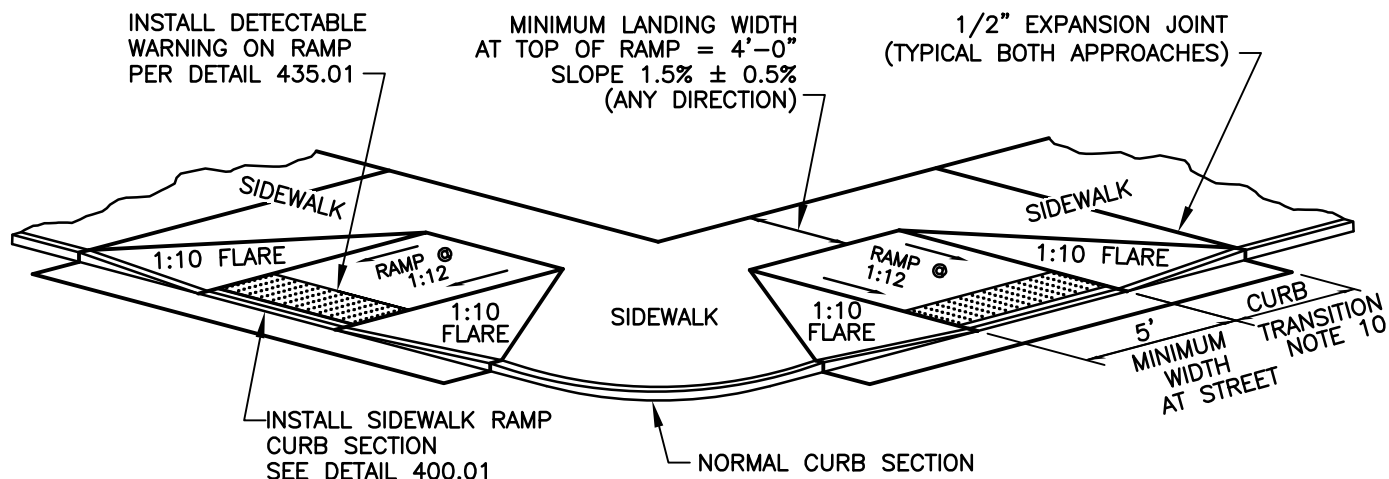
Revisions



City of Columbia
Public Works Department

MIDBLOCK SIDEWALK RAMP Sidewalk with Grass Parkway

431.01



NOTE:

1. RAMP SHALL BE 6" THICK MoDOT PAVEMENT CONCRETE WITH #4 BARS AT 12" O.C. E.W.
2. EXPANSION JOINT SHALL BE 1/2" PREFORMED CORK OR BITUMINOUS EXPANSION JOINT MATERIAL.
3. MAXIMUM RAMP CROSS SLOPE IS 2.00%.
4. ALL SLOPES ARE MEASURED FROM THE HORIZONTAL.
5. REPLACE STANDARD CURB SECTION WITH SIDEWALK RAMP CURB SECTION – DETAIL 400.01
6. RAMP LENGTH IS DEPENDENT ON 1:12 MAX. SLOPE. USE FLATTER WHEN POSSIBLE.
7. LANDING AREA AT TOP OF RAMP SHALL BE 4'-0" MIN WIDTH, CROSS SLOPE OF LANDING SHALL NOT EXCEED 2.00%.
8. TYPE "A" RAMP NOT APPLICABLE IF SIDEWALK WIDTH DOES NOT PROVIDE 4'-0" LANDING AT THE TOP OF RAMP. USE TYPE "B" RAMP.
9. RAMP EXTENDS INTO SIDEWALK, FLARE SLOPE MUST NOT EXCEED 1:10.
10. CURB TRANSITION LENGTH IS DEPENDENT ON 1:10 FLARE SLOPE

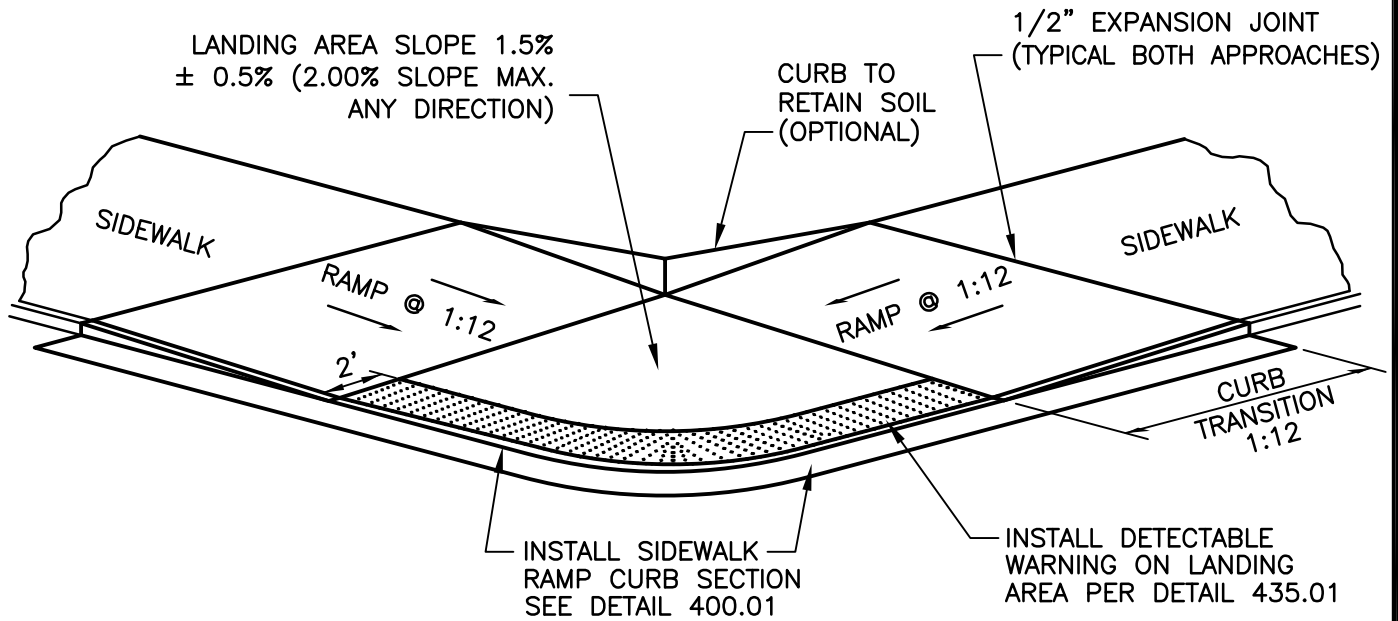
	07/01/20
Approved	Date
Revisions	



SIDEWALK RAMP

Sidewalk at Back of Curb (Type A)

432.01



NOTES:

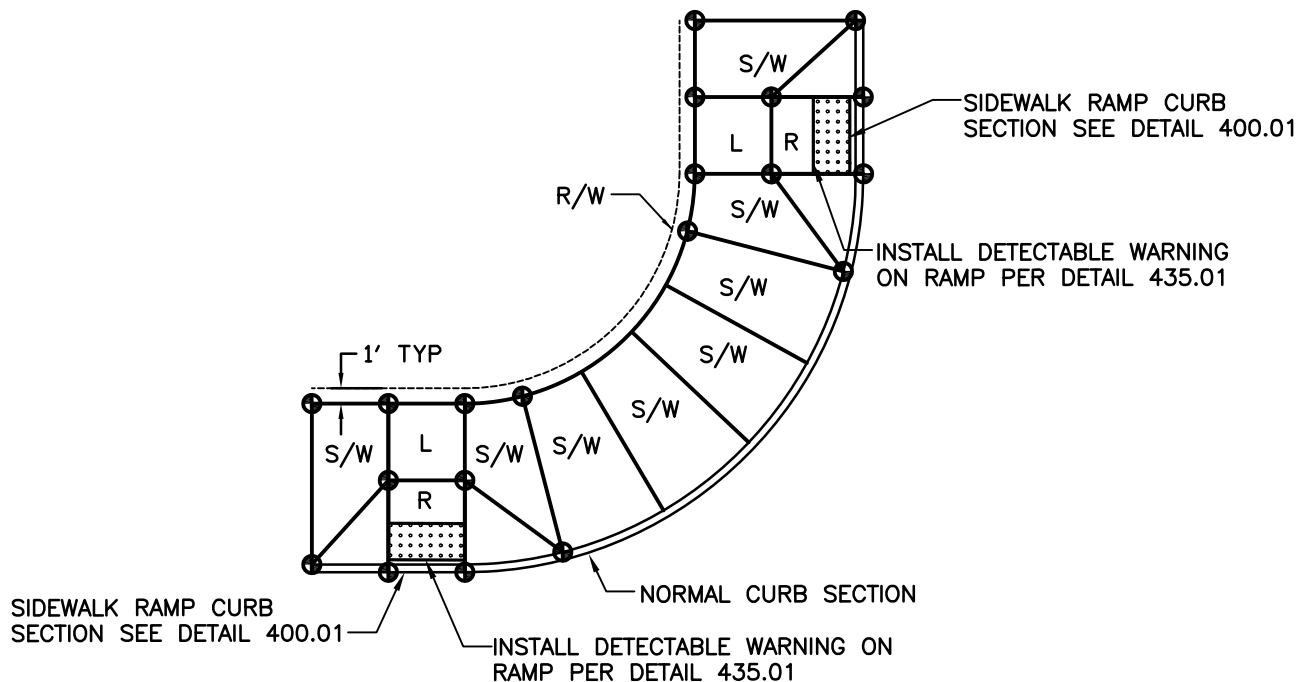
1. RAMP AND LANDING SHALL BE 6" THICK REINFORCED MoDOT PAVEMENT CONCRETE W/#4 BARS @ 12" O.C.
2. EXPANSION JOINT SHALL BE 1/2" PREFORMED CORK OR BITUMINOUS EXPANSION JOINT MATERIAL.
3. MAXIMUM RAMP CROSS SLOPE IS 2.00%.
4. ALL SLOPES ARE MEASURED FROM THE HORIZONTAL.
5. REPLACE STANDARD CURB SECTION WITH SIDEWALK RAMP CURB SECTION – DETAIL 400.01
6. RAMP LENGTH IS DEPENDENT ON 1:12 MAX. SLOPE. USE FLATTER WHEN POSSIBLE.
7. LANDING AREA SHALL BE 4'-0" MIN WIDTH.
8. USE TYPE "B" RAMP ONLY IF TYPE "A" IS NOT FEASIBLE.

	07/01/20
Approved	Date
Revisions	

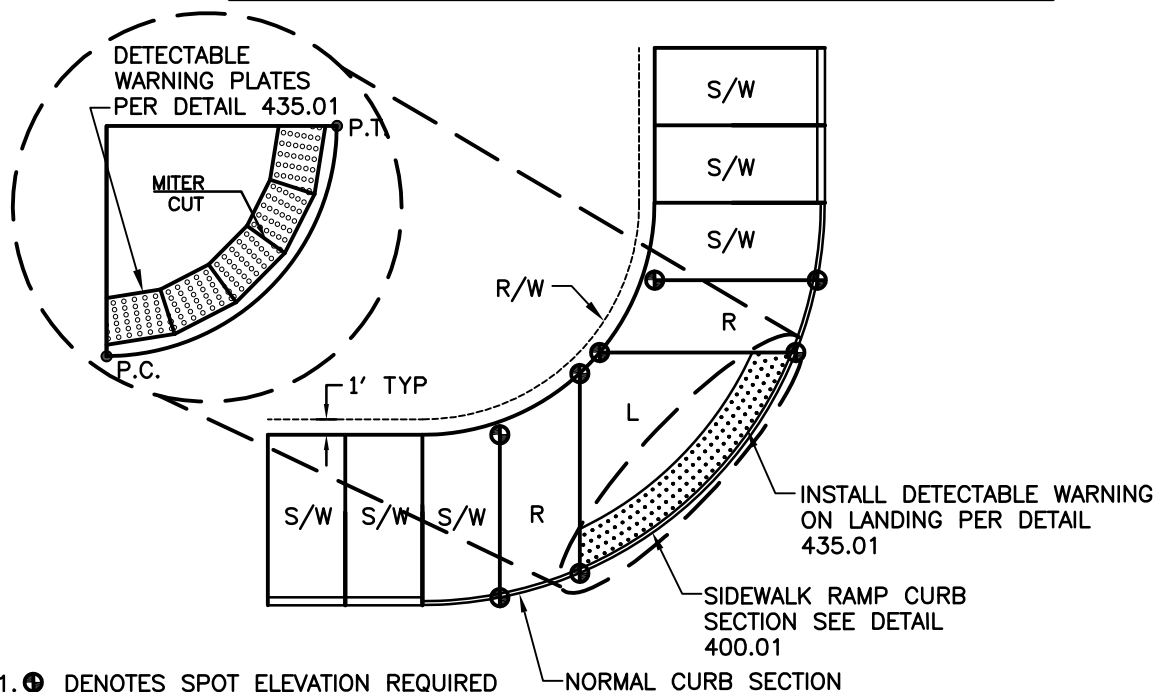


SIDEWALK RAMP
Sidewalk at Back of Curb
(Type B)

432.02



TYPE "A" SIDEWALK AT BACK OF CURB



1. Ⓢ DENOTES SPOT ELEVATION REQUIRED
2. DETECTABLE WARNING PLATES ARE TO BE MITERED EQUALLY ON BOTH SIDES TO BE FLUSH.

TYPE "B" SIDEWALK AT BACK OF CURB

R = RAMP RUNNING SLOPE 8.3% (1:12) MAXIMUM

L = LANDING SLOPE 1.5% ± 0.5% (2.0% MAXIMUM ANY DIRECTION)

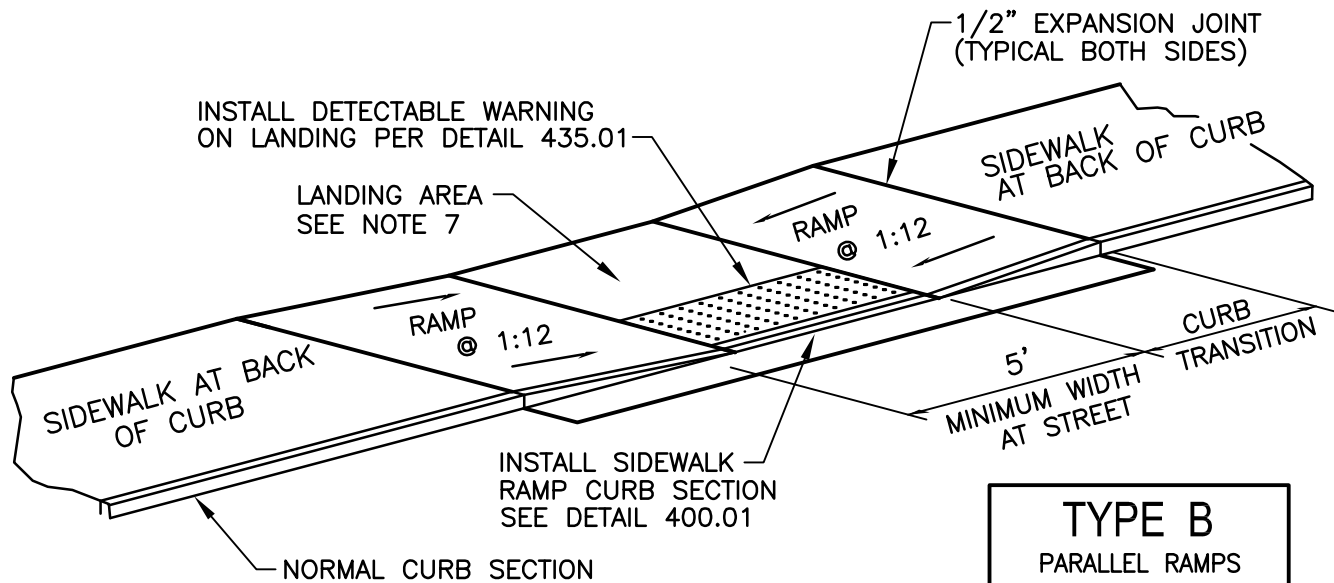
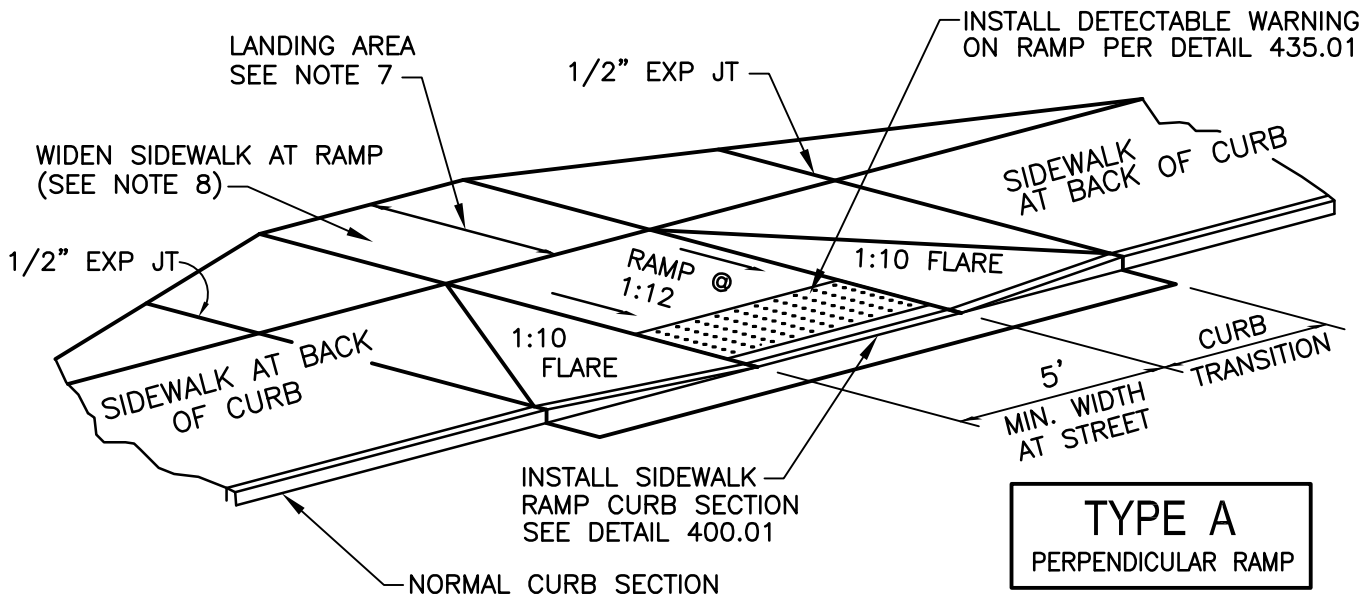
S/W = SIDEWALK CROSS 1.5% ± 0.5% (2.0% MAXIMUM)

	07/01/20
Approved	Date
Revisions	



SIDEWALK RAMP PLAN VIEW
Sidewalk at Back of Curb
(Type A & B)

432.03



NOTE:

1. RAMP SHALL BE 4" THICK REINFORCED MoDOT PAVEMENT CONCRETE SAME AS SIDEWALK.
2. EXPANSION JOINT SHALL BE 1/2" PREFORMED CORK OR BITUMINOUS EXPANSION JOINT MATERIAL.
3. MAXIMUM RAMP CROSS SLOPE IS 2.00%.
4. ALL SLOPES ARE MEASURED FROM THE HORIZONTAL.
5. REPLACE STANDARD CURB SECTION WITH SIDEWALK RAMP CURB SECTION - DETAIL 400.01
6. RAMP LENGTH IS DEPENDENT ON 1:12 MAX. SLOPE. USE FLATTER WHEN POSSIBLE.
7. LANDING AREA SHALL BE 4'-0" MIN. WIDTH. SLOPE OF LANDING SHALL BE 1.5% ± 0.5% (2.0% MAXIMUM ANY DIRECTION)
8. TYPE "A" RAMP NOT APPLICABLE WHEN NORMAL SIDEWALK WIDTH DOES NOT PROVIDE 4'-0" LANDING AT THE TOP OF RAMP, WIDEN SIDEWALK OR USE TYPE "B" RAMP.
9. 1:10 FLARES ARE REQUIRED ON TYPE "A" RAMPS.

[Signature]
Approved

07/01/20
Date

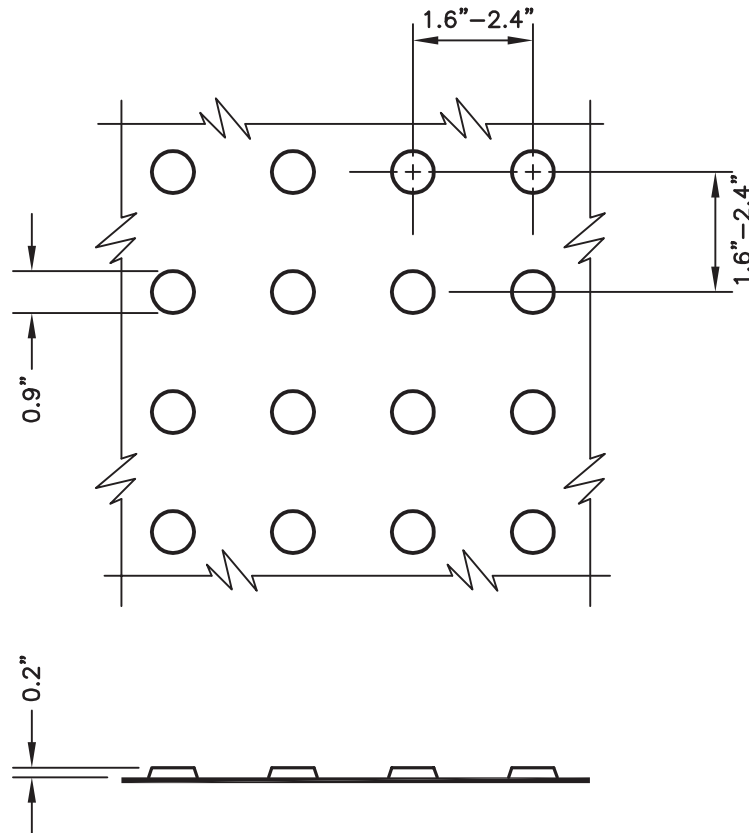
Revisions



City of Columbia
Public Works Department

MIDBLOCK SIDEWALK RAMP Sidewalk at Back of Curb

433.01



NOTE:

1. DETECTABLE WARNING SHALL CONSIST OF RAISED TRUNCATED DOMES WITH A DIAMETER OF 0.9", A HEIGHT OF NOMINAL 0.2", AND A CENTER-TO-CENTER SPACING OF NOMINAL 2.35", AND SHALL CONTRAST VISUALLY WITH ADJOINING SURFACES, ACHIEVED BY THE INSTALLATION OF ADA SOLUTIONS 2436 REPBR, 2448 REPBR, OR 2460 REPBR (OR APPROVED EQUAL) AND SHALL BE AN INTEGRAL PART OF THE WALKING SURFACE.
2. ADA SOLUTIONS 24RADREPBR OR APPROVED EQUAL TO BE USED WITH DETAIL 430.02, 432.02, AND 1000.08.
3. STAMPED CONCRETE IS NOT AN APPROVED EQUAL.
4. DOWNTOWN DETECTABLE WARNINGS MAY BE ADA 2004 COMPLIANT DETECTABLE WARNING PAVERS.
5. DETECTABLE WARNING PLATES ARE TO BE COLONIAL OR BRICK RED IN COLOR OR APPROVED EQUAL.
6. DETECTABLE WARNING SURFACES SHALL BE 24" WIDE AND EXTEND THE FULL LENGTH OF THE PUBLIC USE AREA.


Approved

10/01/16
Date

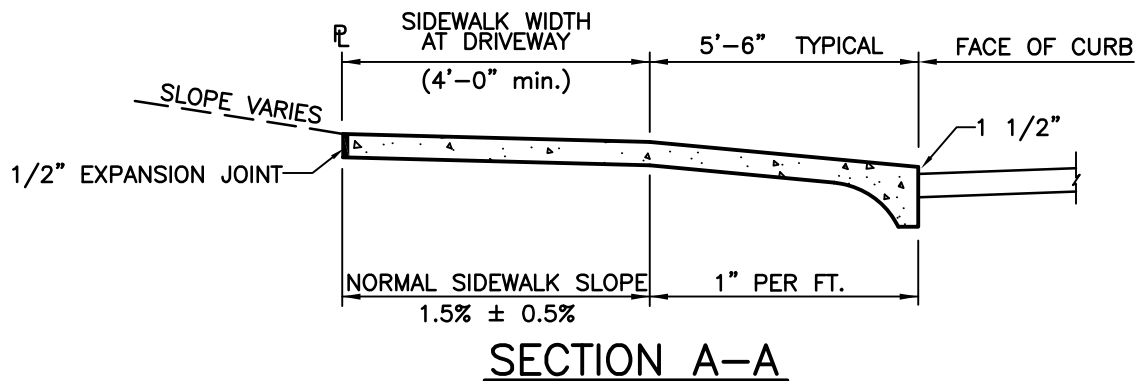
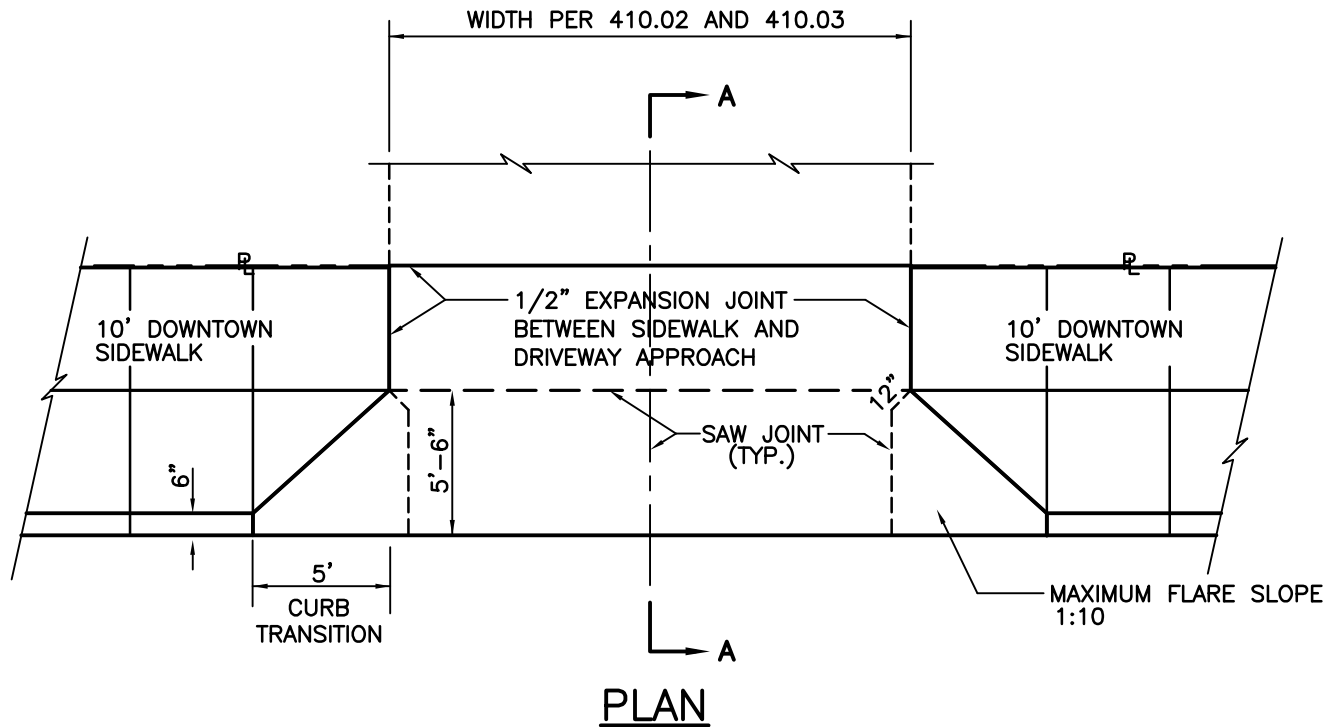
Revisions



City of Columbia
Public Works Department

DETECTABLE WARNING

435.01



NOTES:

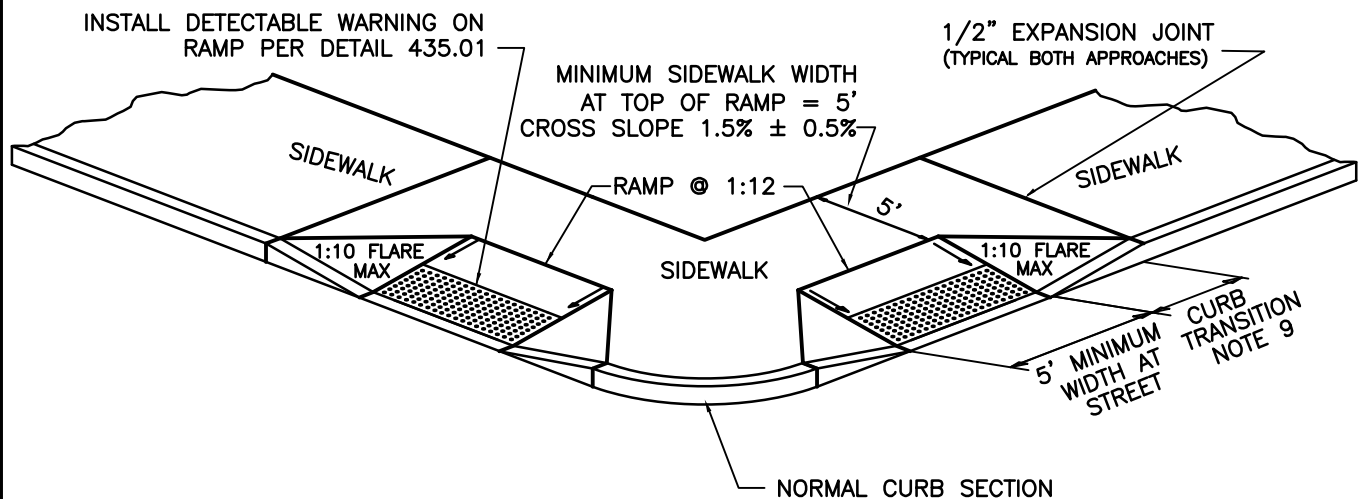
1. DRIVEWAY APPROACH SHALL BE 7" THICK M&D PAVEMENT CONCRETE.
2. SEE JOINT DETAILS - 1000.03.
3. ALL DRIVEWAY APPROACHES SHALL SLOPE TOWARD THE STREET.
4. ALL DRIVEWAY APPROACHES SHALL BE CONSTRUCTED TO ACCOMMODATE SIDEWALKS. (EXISTING AND FUTURE)
5. OMIT 1 1/2" EDGE AT GUTTER IF DRIVE APPROACH ALSO SERVES AS ACCESSIBLE SIDEWALK RAMP.
6. DRIVEWAY MAY BE REINFORCED AT OWNERS OPTION. DO NOT REINFORCE ON CITY BID PROJECTS.
7. SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2.00%.

 Approved	07/01/20 Date
Revisions	



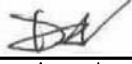
DRIVEWAY AND ALLEY (Downtown)

1000.05



NOTE:

1. RAMP, LANDING AND AREA BETWEEN RAMPS SHALL BE 6" THICK REINFORCED W/ #4 @ 12" O.C. MoDOT PAVEMENT CONCRETE.
2. SEE DETAIL 1000.03 FOR JOINT DETAILS.
3. MAXIMUM RAMP CROSS SLOPE IS 2.00%.
4. ALL SLOPES ARE MEASURED FROM THE HORIZONTAL.
5. RAMP LENGTH IS DEPENDENT ON 1:12 MAX. SLOPE. USE FLATTER WHEN POSSIBLE.
6. LANDING AREA AT TOP OF RAMP SHALL BE 5' MIN WIDTH, CROSS SLOPE OF LANDING SHALL NOT EXCEED 2.00%.
7. TYPE "A" RAMP NOT APPLICABLE IF SIDEWALK WIDTH DOES NOT PROVIDE 5' LANDING AT THE TOP OF RAMP. USE TYPE "B" RAMP.
8. RAMP EXTENDS INTO SIDEWALK, FLARE SLOPE MUST NOT EXCEED 1:10.
9. CURB TRANSITION LENGTH IS DEPENDENT ON 1:10 FLARE SLOPE

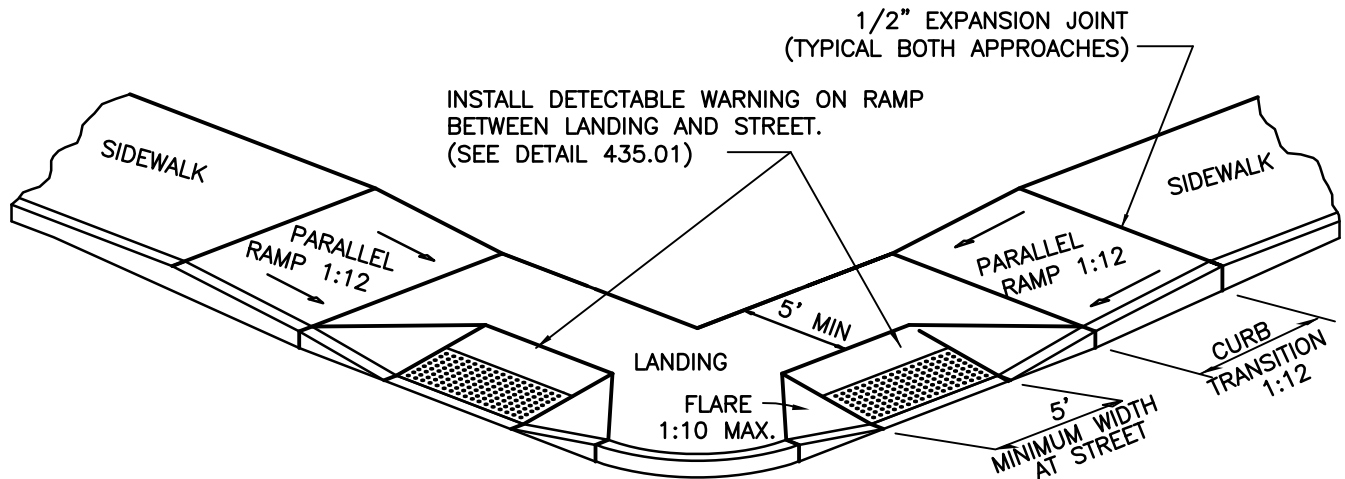
	07/01/20
Approved	Date
Revisions	



SIDEWALK RAMP

Sidewalk at Back of Curb (Type A)

1000.06



NOTE:

1. RAMP, LANDING AND AREA IN BETWEEN SHALL BE 6" THICK REINFORCED W/#4@12" O.C. MoDOT PAVEMENT CONCRETE.
2. EXPANSION JOINT SHALL BE 1/2" PREFORMED CORK OR BITUMINOUS EXPANSION JOINT MATERIAL.
3. MAXIMUM RAMP CROSS SLOPE IS 2.00%.
4. ALL SLOPES ARE MEASURED FROM THE HORIZONTAL.
5. RAMP SLOPE 1:12 MAX. USE FLATTER WHEN POSSIBLE.
6. LANDING AREA SHALL BE 5'-0" MIN WIDTH, LANDING CROSS SLOPE 1.5% ± 0.5% (2.0% MAXIMUM ANY DIRECTION).
7. TYPE "B" RAMP PROVIDES PARALLEL RAMPS TO REDUCE THE PERPENDICULAR RAMP LENGTH AND PROVIDE ADEQUATE LANDING.
8. RAMP EXTENDS INTO SIDEWALK, FLARE SLOPE MUST NOT EXCEED 1:10.

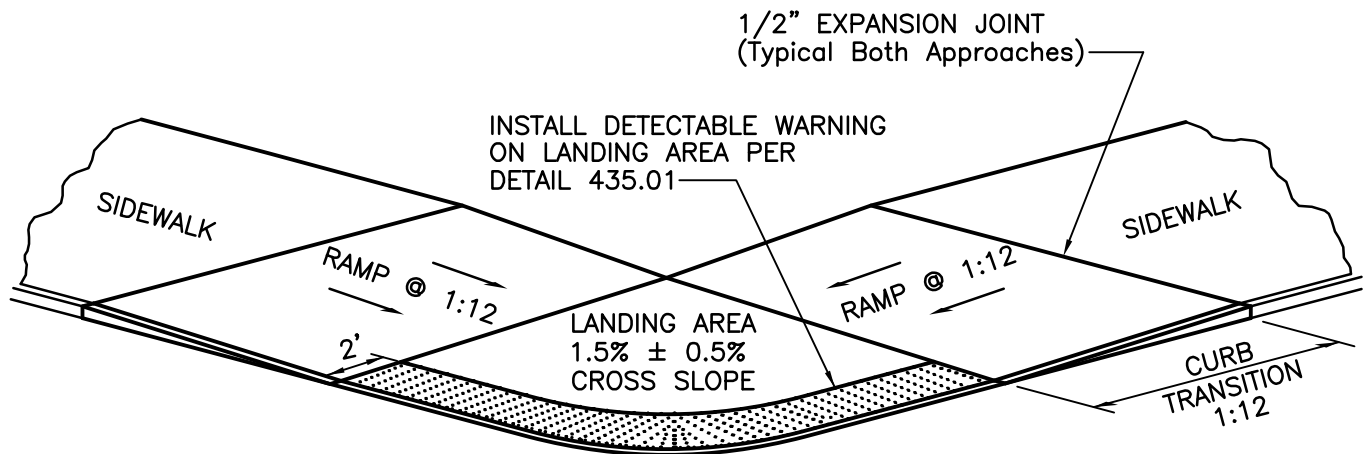
	047/01/20
Approved	Date
Revisions	



SIDEWALK RAMP

Sidewalk at Back of Curb (Type B)

1000.07



NOTE:

1. RAMP AND LANDING SHALL BE 6" THICK REINFORCED W/#4@12" O.C. MoDOT PAVEMENT CONCRETE.
2. EXPANSION JOINT SHALL BE 1/2" PREFORMED CORK OR BITUMINOUS EXPANSION JOINT MATERIAL.
3. MAXIMUM RAMP CROSS SLOPE IS 2.00%.
4. ALL SLOPES ARE MEASURED FROM THE HORIZONTAL.
5. RAMP LENGTH IS DEPENDENT ON 1:12 MAX. SLOPE. USE FLATTER WHEN POSSIBLE.
6. LANDING AREA SHALL BE 5'-0" MIN WIDTH, CROSS SLOPE OF LANDING SHALL NOT EXCEED 2.00%.
7. USE TYPE "C" RAMP ONLY IF TYPE "A" & "B" ARE NOT FEASIBLE.

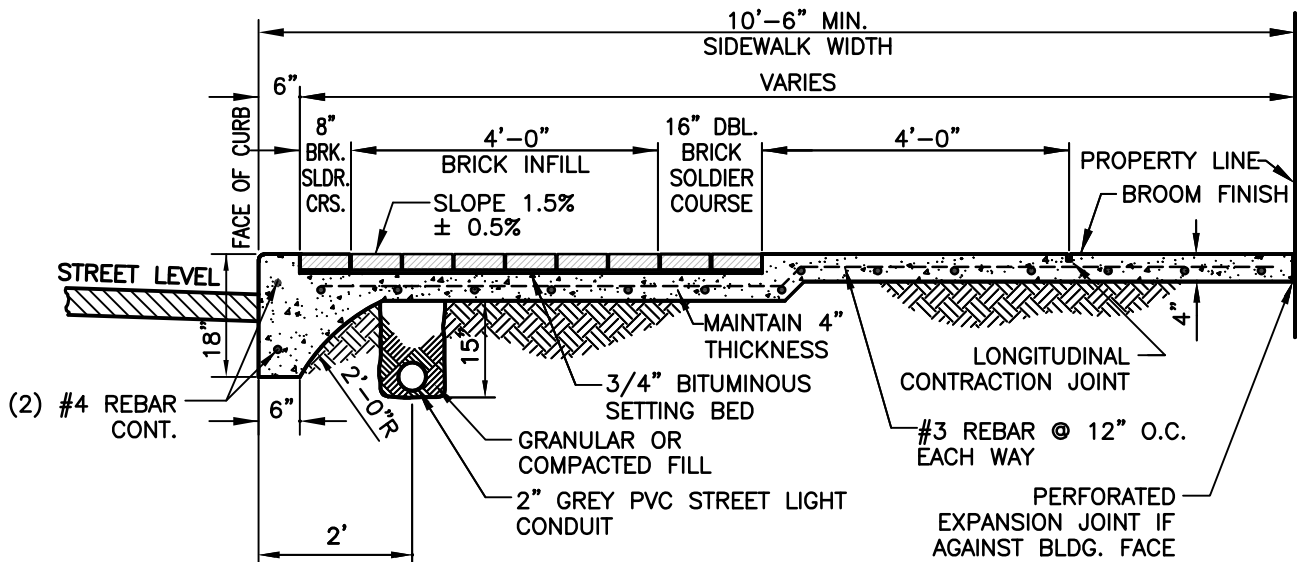
	07/01/20
Approved	Date
Revisions	



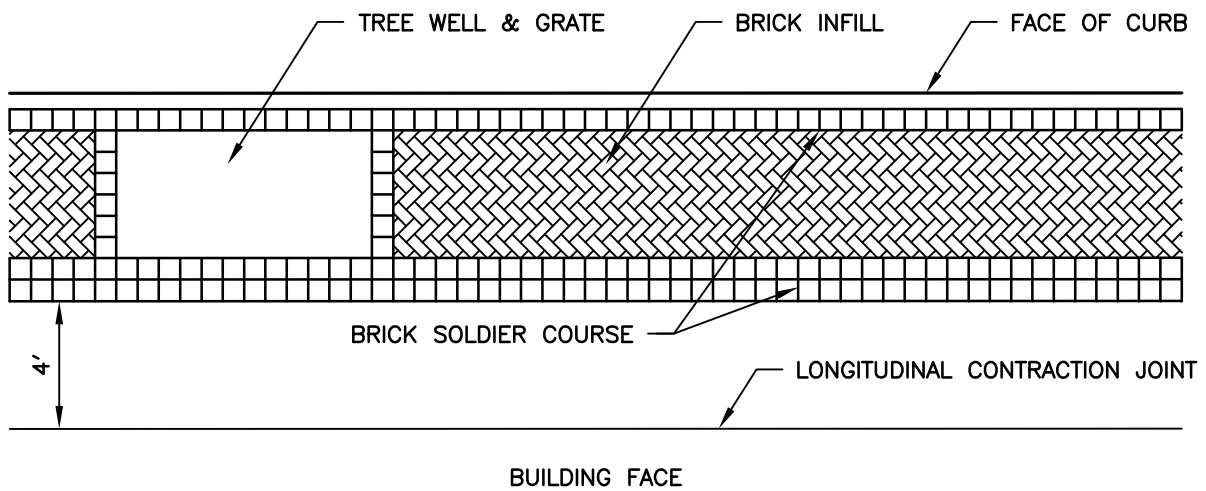
SIDEWALK RAMP

Sidewalk at Back of Curb (Type C)

1000.08



TYPICAL SECTION



PLAN VIEW

NOTES:

1. SIDEWALK CROSS SLOPE 1.5% ± 0.5% (2.0% MAXIMUM).
2. SAW AND PATCH STREET PAVEMENT AS NECESSARY FOR CONSTRUCTION OF NEW CURB.
3. SEE JOINT DETAILS - 1000.03.
4. SEE SPECIFICATIONS - 1000.01
5. NO STEEL TO BE PLACED THROUGH EXPANSION JOINT
6. FOR SIDEWALK SECTIONS LESS THAN 10'-6" A MODIFIED DETAIL WILL BE REQUIRED.

	07/01/20
Approved	Date
Revisions	



**DOWNTOWN SIDEWALK -
ALONG 8th STREET & BROADWAY**

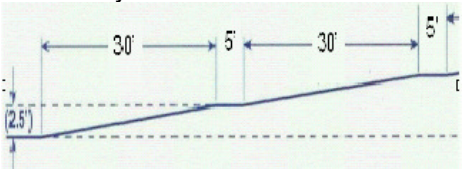
1000.10A

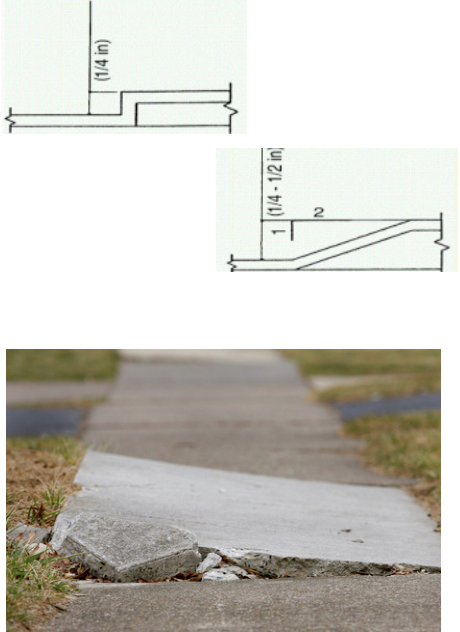
ADA CHECKLIST

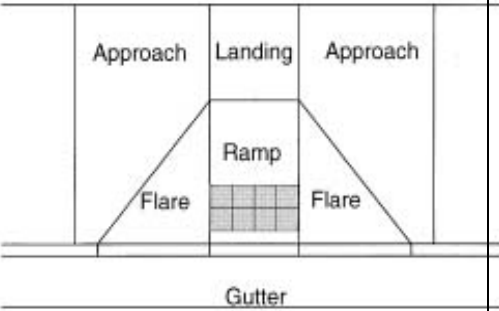
Revised April 22, 2015

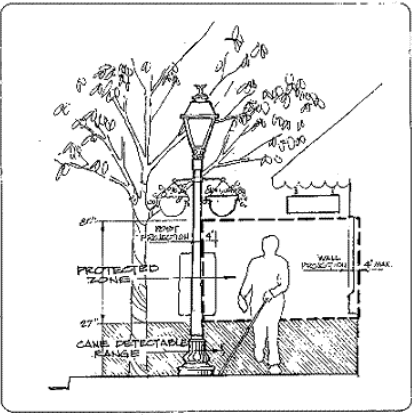
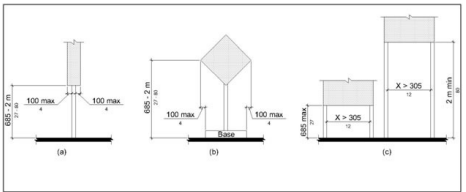
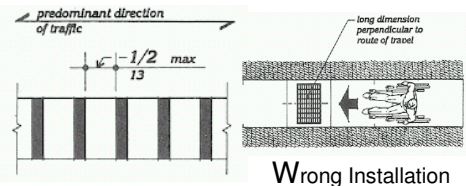
Job No. _____ Route _____ County _____ Location _____

Pedestrian Access Route (PROWAG R204)				
Figures/Examples	Requirements ¹	YES	NO	NA
Sidewalk Width 	- The minimum continuous and unobstructed clear width of a pedestrian access route shall be 4.0 feet, exclusive of the width of the curb. - The continuous clear width of pedestrian access routes for medians and pedestrian refuge islands must be 5 feet minimum in order to allow for passing space. - MoDOT Sidewalks shall be 5 feet wide minimum.² - MoDOT Sidewalks located within 2 feet of the back of curb are to be constructed 6 feet wide minimum and constructed adjacent to the back of the curb.² - Exception: an unaltered, existing sidewalk shall be 3 feet wide minimum and shall provide 5 foot x 5 foot passing spaces at intervals of 200 feet maximum.² - Detectable warning surfaces shall be provided, where a curb ramp, landing, or blended transition connects to a street. Where commercial driveways are provided with traffic control devices or otherwise are permitted to operate like public streets, detectable warnings should be provided at the junction between the pedestrian route and the street. - Gratings, access covers, and other appurtenances shall not be located on curb ramps, landings, blended transitions, and gutters within the pedestrian access route. - Grade breaks shall not be permitted on the surface of curb ramps, blended transitions, landings, and gutter areas within the pedestrian access route. Surface slopes that meet at grade breaks shall be flush.			
Passing Spaces	- Walkways in pedestrian access routes that are less than 5 feet in clear width shall provide passing spaces at intervals of 200 feet maximum. - Pedestrian access routes at passing spaces shall be 5 feet wide for a distance of 5 feet.			
Sidewalk Running Slope The grade that is parallel to the direction of travel, expressed as a ratio of rise to run or as a percent.	- The running slope of a pedestrian access route shall be 5 percent maximum. Roadway Grade Exception: Where pedestrian access routes are contained within a street or highway right-of-way, the grade of the pedestrian access route is permitted to equal the general grade established for the adjacent street or highway. - Running Slopes shall be measured using a calibrated 2 foot long digital level.			

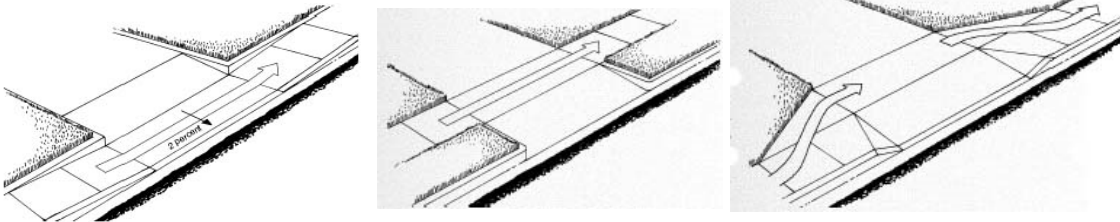
Figures/Examples	Requirements ¹	YES	NO	NA
Sidewalk Cross Slope The grade that is perpendicular to the direction of accessible pedestrian travel, measured perpendicular to the curb line or edge of the street or highway, or measured perpendicular to the running grade.	• The cross slope of the walkway of a pedestrian access route shall be 2 percent maximum. (Roadway Grade Exception may be considered) • 2010 ADA/ABA allows for cross slopes of up to ¼ inch per foot (2.08 percent). • In either case, a cross slope measurement of 2.1percent or greater is not ADA compliant. • Cross Slopes shall be measured using a calibrated 2 foot long digital level.			
Sidewalk Ramps For example, a ramp segment with the maximum allowed running slope of 8.33% would require 5' x 5' landing after every 30' of run. 	• A sidewalk segment (not contained within a street or highway border) with a running grade in excess of 5 percent but less than 8.33 percent is by definition a sidewalk ramp. • The clear width of landings, blended transitions, and curb ramps, excluding flares, shall be 4.0 feet minimum. • Cross slope of ramp runs shall be 2 percent maximum. • The rise for any ramp run shall be 30 inches maximum. • Ramps shall have landings at the top and the bottom of each ramp run. • Ramp runs with a rise greater than 6 inches shall have handrails. • Handrails shall be provided on both sides of stairs and ramps. • Edge protection shall be provided on each side of ramp runs. • Detectable warning surfaces shall be provided, where a curb ramp, landing, or blended transition connects to a street. • Gratings, access covers, and other appurtenances shall not be located on ramps, landings, blended transitions, and gutters within the pedestrian access route. • Grade breaks shall not be permitted on the surface of ramps, blended transitions, landings, and gutter areas within the pedestrian access route. Surface slopes that meet at grade breaks shall be flush.			

Figures/Examples	Requirements ¹	YES	NO	NA
Vertical Alignment	- Vertical alignment shall be planar within curb ramp runs, blended transitions, landings, and gutter areas within the pedestrian access route, and within clear spaces required for accessible pedestrian signals, street furniture, and operable parts. - Grade breaks shall not be permitted on the surface of curb ramps, blended transitions, landings, and gutter areas within the pedestrian access route. - Grade breaks shall be flush. - Running Slopes and Cross Slopes shall be measured using a calibrated 2 foot long digital level. - Where the pedestrian access route crosses rail tracks at grade, the surface of the pedestrian access route shall be level and flush with the top of the rail at the outer edges of the rail. The surface between the rails shall be aligned with the top of the rail.			
Changes in Level 	- Changes in level at grade breaks shall be flush. - Changes in level of 1/4 inch high maximum shall be permitted to be vertical. - Changes in level between 1/4 inch high maximum and 1/2 inch high maximum shall be beveled with a slope not steeper than 1v:2h. - The bevel shall be applied across the entire level change. - Changes in level greater than 1/2 inch high shall be ramp grade or flatter, a slope of 8.33 percent or less.			

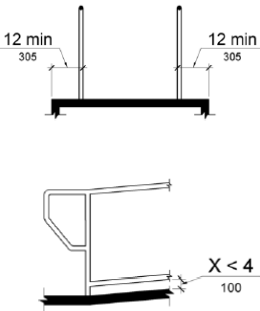
Figures/Examples	Requirements ¹	YES	NO	NA
Landing A required level space required at both ends of a ramp. An area 5' x 5' with no slope greater than 2 percent. This space can be used as a place to rest, turn or pass another user. Landings that are contained within a street or highway border are permitted to use the Roadway Grade Exception for running slopes or cross slopes in the direction of the roadway travel being matched.  The diagram illustrates a cross-section of a pedestrian access route. It shows a central 'Landing' area flanked by 'Approach' areas. A 'Ramp' is shown within the landing area, with 'Flare' areas on either side. Below the landing area is a 'Gutter'.	• The landing clear width shall be at least as wide as the widest ramp run leading to the landing. • The clear width of landings, blended transitions, and curb ramps, excluding flares, shall be 4 feet minimum. • The landing clear length shall be 5 feet long minimum. • Landing slopes shall be 2 percent maximum. • Changes in level at grade breaks shall be flush. • Detectable warning surfaces shall be provided, where a curb ramp, landing, or blended transition connects to a street. Detectable warning shall be located on the landing or blended transition at the back of curb. • Gratings, access covers, and other appurtenances shall not be located on curb ramps, landings, blended transitions, and gutters within the pedestrian access route. • Grade breaks shall not be permitted on the surface of curb ramps, blended transitions, landings, and gutter areas within the pedestrian access route. Surface slopes that meet at grade breaks shall be flush. <u>Roadway Grade Exception:</u> The grade of pedestrian access routes within sidewalks is permitted to equal the general grade established for the adjacent street or highway. The cross slope of curb ramps, blended transitions, landings, and turning spaces at pedestrian street crossings without yield or stop control where vehicles can proceed through the intersection without slowing or stopping, and at midblock pedestrian street crossings are permitted to equal the street or highway grade. • Running Slopes and Cross Slopes shall be measured using a calibrated 2 foot long digital level.			

Figures/Examples	Requirements ¹	YES	NO	NA
 	- Protruding objects on sidewalks and other pedestrian circulation paths shall not reduce the clear width required for pedestrian accessible routes. - Objects with leading edges more than 27 inches and not more than 80 inches above the finish floor or ground shall protrude 4 inches maximum horizontally into the circulation path. - Free-standing objects mounted on posts or pylons shall overhang circulation paths 4 inches maximum measured horizontally from the post or pylon base when located 27 inches minimum and 80 inches maximum above the finish floor or ground. The base dimension shall be 2.5 inches thick minimum. (2011 PROWAG R402.3) - Where a sign or other obstruction is mounted between posts or pylons and the clear distance between the posts or pylons is greater than 12 inches, the lowest edge of such sign or obstruction shall be 27 inches maximum or 80 inches minimum above the finish floor or ground. - Vertical clearance shall be 80 inches high minimum. Guardrails or other barriers shall be provided where the vertical clearance is less than 80 inches high. The leading edge of such guardrail or barrier shall be located 27 inches maximum above the finish floor or ground. - Guardrails or other barriers shall be provided where the vertical clearance is less than 80 inches high. The leading edge of such guardrail or barrier shall be located 27 inches maximum above the finish surface or ground.			
  Wrong Installation	- Openings in floor and ground surfaces shall not allow passage of a sphere more than 1/2 inch diameter. Elongated openings shall be placed so that the long dimension is perpendicular to the dominant direction of travel. - Gratings, access covers, and other appurtenances shall not be located on curb ramps, landings, blended transitions, and gutters within the pedestrian access route. - Lift holes for manhole/utility covers shall not have an opening greater than 1/2 inch. Plugging of holes greater than 1/2 inch with a material approved by the engineer is acceptable as long as it complies with the changes in level requirements.			

ENTRANCES (PROWAG R301)

Figures/Examples	Requirements ¹	YES	NO	NA
	- The minimum continuous and unobstructed clear width of a pedestrian access route provided across commercial and residential entrances shall be 4 feet minimum. - Cross slope shall be 2 percent maximum. - Be cautious with the transition from the driveway to the roadway to avoid grade combinations that will cause vehicles to bottom out when driving over the transition.² 			

EDGE PROTECTION (PROWAG R406.8)

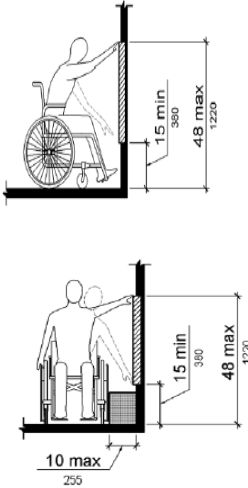
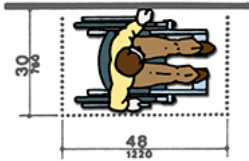
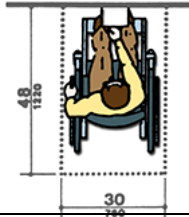
Figures/Examples	Requirements ¹	YES	NO	NA
	- Edge protection shall be provided on each side of ramp runs and at each side of ramp landings. - A curb or barrier shall be provided that prevents the passage of a 4 inch diameter sphere, where any portion of the sphere is within 4 inches of the finish floor or ground surface. - Edge-protection shall not be required when the floor or ground surface of the ramp run or landing extends 12 inches minimum beyond the inside face of a handrail. - Edge protection shall not be required on curb ramps and their landings. - Edge protection shall not be required on ramps that are not required to have handrails and have flares not steeper than 1:10. - Edge protection shall not be required on the sides of ramp landings having a vertical drop-off of 1/2 inch maximum within 10 inches horizontally of the minimum landing area.			

HANDRAIL AND PEDESTRIAN GUARDRAIL (PROWAG R408)				
Figures/Examples	Requirements ¹	YES	NO	NA
	- The clear width of walking surfaces shall be 4.0 feet minimum. - Handrails are required on ramp runs with a rise greater than 6 inches and on certain stairways. Handrails are not required on walking surfaces with running slopes less than 1:20. Where required, handrails shall be provided on both sides of stairs and ramps. - Handrails shall be continuous within the full length of each stair flight or ramp run. Inside handrails on switchback or dogleg stairs and ramps shall be continuous between flights or runs. - Top of gripping surfaces of handrails shall be 34 inches minimum and 38 inches maximum vertically above walking surfaces, stair nosings, and ramp surfaces. Handrails shall be at a consistent height above walking surfaces, stair nosings, and ramp surfaces. - Clearance between handrail gripping surfaces and adjacent surfaces shall be 1 1/2 inches minimum. - Handrail gripping surfaces with a circular cross section shall have an outside diameter of 1 1/4 inches minimum and 2 inches maximum. - Handrail gripping surfaces with a non-circular cross section shall have a perimeter dimension of 4 inches minimum and 6 1/4 inches maximum, and a cross-section dimension of 2 1/4 inches maximum. - Handrail gripping surfaces and any surfaces adjacent to them shall be free of sharp or abrasive elements and shall have rounded edges. - Handrails shall not rotate within their fittings. - Ramp handrails shall extend horizontally above the landing for 12 inches minimum beyond the top and bottom of ramp runs. Extensions shall return to a wall, guard, or the landing surface, or shall be continuous to the handrail of an adjacent ramp run. - At the top of a stair flight, handrails shall extend horizontally above the landing for 12 inches minimum beginning directly above the first riser nosing. Extensions shall return to a wall, guard, or the landing surface, or shall be continuous to the handrail of an adjacent stair flight. - At the bottom of a stair flight, handrails shall extend at the slope of the stair flight for a horizontal distance at least equal to one tread depth beyond the last riser nosing. Extension shall return to a wall, guard, or the landing surface, or shall be continuous to the handrail of an adjacent stair flight. - See Edge Protection section above (also PROWAG 406.8) for additional details.			

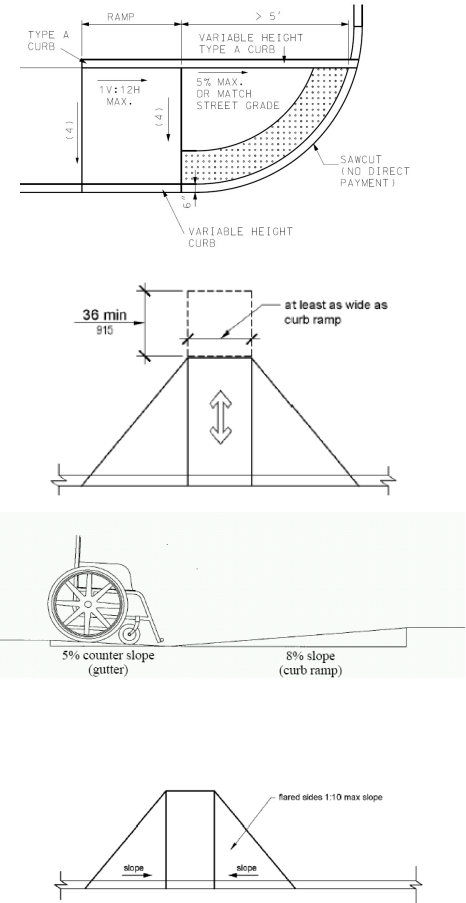
STAIRWAYS (PROWAG R407)

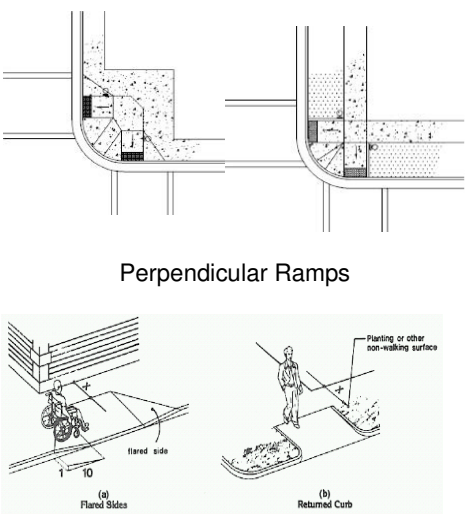
Figures/Examples	Requirements ¹	YES	NO	NA
	- All steps on a flight of stairs shall have uniform riser heights and uniform tread depths. Risers shall be 4 inches high minimum and 7 inches high maximum. Treads shall be 11 inches deep minimum. - Open risers are not permitted. - The radius of curvature at the leading edge of the tread shall be 1/2 inch maximum. Nosings that project beyond risers shall have the underside of the leading edge curved or beveled. Risers shall be permitted to slope under the tread at an angle of 30 degrees maximum from vertical. The permitted projection of the nosing shall extend 1 1/2 inches maximum over the tread below. - Stairs shall have handrails complying with PROWAG 2005 R408.			

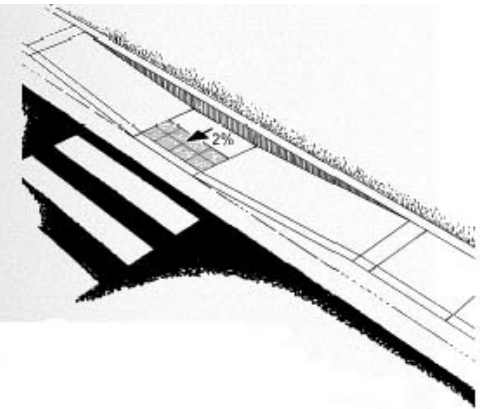
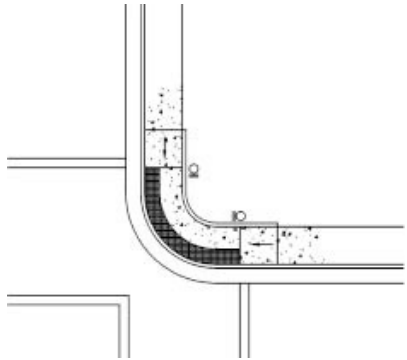
UNOBSTRUCTED REACH RANGES (PROWAG R404)

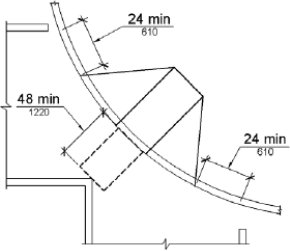
Figures/Examples	Requirements ¹	YES	NO	NA
	Forward Reach - Where a forward reach is unobstructed, the high forward reach shall be 48 inches maximum and the low forward reach shall be 15 inches minimum above the finish floor or ground. Side Reach - Where a clear floor or ground space allows a parallel approach to an element and the side reach is unobstructed, the high side reach shall be 48 inches maximum and the low side reach shall be 15 inches minimum above the finish floor or ground. EXCEPTION: An obstruction shall be permitted between the clear floor or ground space and the element where the depth of the obstruction is 10 inches maximum. (2011 PROWAG R406.3) Parallel Approach  Forward Approach 			

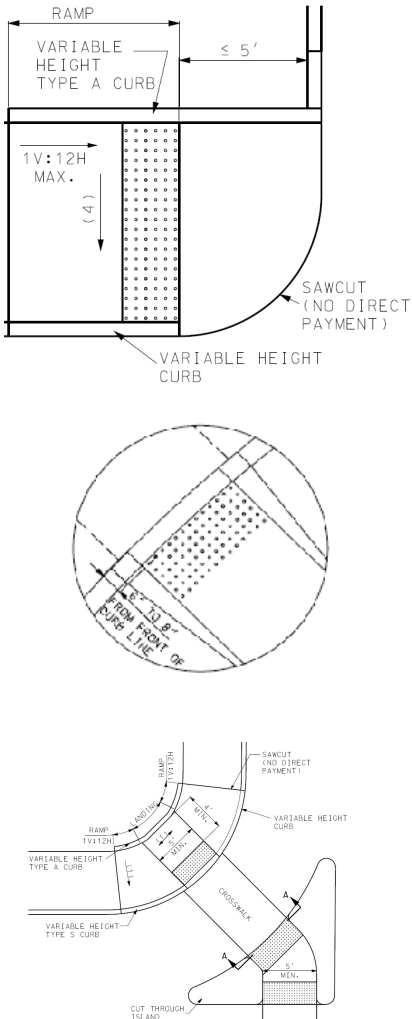
CURB RAMPS (PROWAG R303)

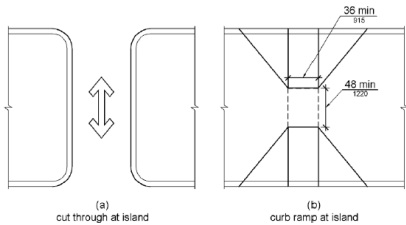
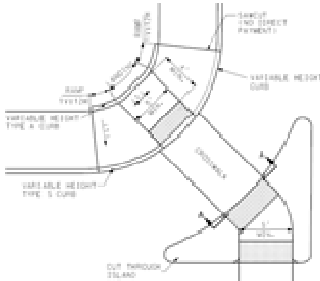
Figures/Examples	Requirements ¹	YES	NO	NA
A curb ramp, blended transition, or a combination of curb ramps and blended transitions shall connect the pedestrian access routes at each pedestrian street crossing.  15 Foot Rule: For a compliant curb ramp to exceed 8.33 percent running grade, its constructed length must exceed 15.0 feet.	- The clear width of ramps, excluding the flares, shall be 4.0 feet minimum. - Ramp runs shall have a running slope between 5 percent minimum and 8.33 percent maximum but shall not require the ramp length to exceed 15.0 feet. Exception: 15 Foot Rule: The running slope for a curb ramp is not limited to 8.33 percent maximum if the constructed curb ramp length exceeds 15 feet in length. - Cross slope of ramp runs shall be 2 percent maximum. (Roadway Grade Exception may be considered) - The cross slope at midblock crossings shall be permitted to be warped to meet street or highway grade. - Ramps shall have landings at the top and the bottom of each ramp run. - The landing clear width shall be at least as wide as the widest ramp run leading to the landing. - The landing clear length shall be 5.0 feet long minimum. - Ramps that change direction between runs at landings shall have a clear landing 5.0 feet minimum by 5.0 feet minimum. - Handrails and Edge protection shall not be required on curb ramps and their landings. - Curb height = 0 inches within curb ramp spaces. 2 - Curb ramps must be flush with street. - The counter slope of the gutter or street at the foot of a curb ramp, landing, or blended transition shall be 5 percent maximum. (R303.3.5) - The adjacent surfaces at transitions at curb ramps to walks, gutters, and streets shall be at the same level. - Flared sides with a slope of 10 percent maximum, measured parallel to the curb line, shall be provided where a pedestrian circulation path crosses the curb ramp. - In alterations, where there is no landing at the top of curb ramps, curb ramp flares shall be provided and shall not be steeper than 1:12. - Detectable warning surfaces shall be provided, where a curb ramp, landing, or blended transition connects to a street. - Gratings, access covers, and other appurtenances shall not be located on curb ramps, landings, blended transitions, and gutters within the pedestrian access route. - Grade breaks shall not be permitted on the surface of curb ramps, blended transitions, landings, and gutter areas within the pedestrian access route. Surface slopes that meet at grade breaks shall be flush. - Grade Breaks at the top and bottom of curb ramp runs shall be perpendicular to the direction of the ramp run.			

Figures/Examples	Requirements ¹	YES	NO	NA
 Perpendicular Ramps Flared Sides in Pathway Flared Sides Not in Pathway Roadway Grade Exception: Where curb ramps, landings and blended transitions are contained within a street or highway right-of-way, the grade of the pedestrian access route is permitted to be modified to equal the general grade established for the adjacent street or highway.	- Perpendicular curb ramps shall have a running slope that cuts through or is built up to the curb at right angles or meets the gutter grade break at right angles. - The clear width of landings, blended transitions, and curb ramps, excluding flares, shall be 4.0 feet minimum. - The running slope shall be 5 percent minimum and 8.33 percent maximum but shall not require the ramp length to exceed 15.0 feet. - The cross slope at intersections shall be 2 percent maximum. (Roadway Grade Exception may be considered) - The cross slope at midblock crossings shall be permitted to be warped to meet street or highway grade. Roadway Grade Exception: The grade of pedestrian access routes within sidewalks is permitted to equal the general grade established for the adjacent street or highway. The cross slope of curb ramps, blended transitions, landings, and turning spaces at pedestrian street crossings without yield or stop control where vehicles can proceed through the intersection without slowing or stopping, and at midblock pedestrian street crossings are permitted to equal the street or highway grade. - A landing 4.0 feet minimum by 4.0 feet minimum shall be provided at the top of the curb ramp and shall be permitted to overlap other landings and clear space. - Flared sides with a slope of 10 percent maximum, measured parallel to the curb line, shall be provided where a pedestrian circulation path crosses the curb ramp. - If the flared sides are not in the pathway (grass next to ramp), then there is no maximum slope and can be vertical curbs. (See adjacent figure for further explanation.) - Detectable warning surfaces shall be provided, where a curb ramp, landing, or blended transition connects to a street. - Gratings, access covers, and other appurtenances shall not be located on curb ramps, landings, blended transitions, and gutters within the pedestrian access route. - Grade breaks at the top and bottom of perpendicular curb ramps shall be perpendicular to the direction of ramp run. At least one end of the bottom grade break shall be at the back of curb. - Grade breaks shall not be permitted on the surface of curb ramps, blended transitions, landings, and gutter areas within the pedestrian access route. Surface slopes that meet at grade breaks shall be flush. - Where both ends of the bottom grade break are 5.0 feet or less from the back of curb, the detectable warning shall be located on the ramp surface at the bottom grade break. Where either end of the bottom grade break is more than 5.0 feet from the back of curb, the detectable warning shall be located on the lower landing.			

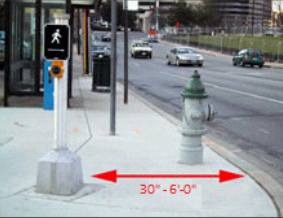
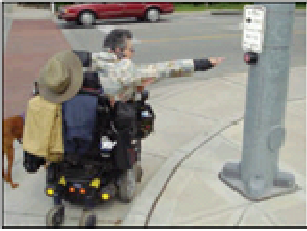
Figures/Examples	Requirements ¹	YES	NO	NA
 Curb Ramps and landings that are contained within a street or highway border may use the Roadway Grade Exception for slopes or cross slopes in the direction of the roadway travel being matched.	• Parallel curb ramps shall have a running slope that is in-line with the direction of sidewalk travel. • The clear width of landings, blended transitions, and curb ramps, excluding flares, shall be 4.0 feet minimum. • The running slope shall be 5 percent minimum and 8.33 percent maximum but shall not require the ramp length to exceed 15.0 feet. • The cross slope shall be 2 percent maximum. (Roadway Grade Exception may be considered) Roadway Grade Exception: The grade of pedestrian access routes within sidewalks is permitted to equal the general grade established for the adjacent street or highway. The cross slope of curb ramps, blended transitions, landings, and turning spaces at pedestrian street crossings without yield or stop control where vehicles can proceed through the intersection without slowing or stopping, and at midblock pedestrian street crossings are permitted to equal the street or highway grade. • A landing 4.0 feet minimum by 4.0 feet minimum shall be provided at the bottom of the ramp run and shall be permitted to overlap other landings and clear floor or ground space. • Where a parallel curb ramp does not occupy the entire width of a sidewalk, drop-offs at diverging segments shall be protected. • Detectable warning surfaces shall be provided, where a curb ramp, landing, or blended transition connects to a street. • Gratings, access covers, and other appurtenances shall not be located on curb ramps, landings, blended transitions, and gutters within the pedestrian access route. • Grade breaks shall not be permitted on the surface of curb ramps, blended transitions, landings, and gutter areas within the pedestrian access route. Surface slopes that meet at grade breaks shall be flush.			
	• Blended Transitions shall have a running slope of 5 percent maximum and cross slope shall be 2 percent maximum. • The clear width blended transitions, excluding flares, shall be 4.0 feet minimum. • Detectable warning surfaces shall be provided where a blended transition connects to a street. • Gratings, access covers, and other appurtenances shall not be located on blended transitions within the pedestrian access route. • Grade breaks at the top and bottom of perpendicular curb ramps shall be perpendicular to the direction of ramp run. At least one end of the bottom grade break shall be at the back of curb. Grade breaks shall not be permitted on the surface of blended transitions and gutter areas within the pedestrian access route. Surface slopes that meet at grade breaks shall be flush.			

Figures/Examples	Requirements ¹	YES	NO	NA
 	• Diagonal Curb Ramps or corner type curb ramps are no longer preferred design types. A design that provides individual ramps for each crossing direction is recommended by the US Access Board. • Diagonal Curb Ramps or corner type curb ramps with returned curbs or other well-defined edges shall have the edges parallel to the direction of pedestrian flow. • The bottom of diagonal curb ramps shall have a clear space 48 inches minimum outside active traffic lanes of the roadway. • Diagonal curb ramps provided at marked crossings shall provide the 48 inches minimum clear space within the markings. • Diagonal curb ramps with flared sides shall have a segment of curb 24 inches long minimum located on each side of the curb ramp and within the marked crossing. <u>Roadway Grade Exception:</u> The grade of pedestrian access routes within sidewalks is permitted to equal the general grade established for the adjacent street or highway. The cross slope of curb ramps, blended transitions, landings, and turning spaces at pedestrian street crossings without yield or stop control where vehicles can proceed through the intersection without slowing or stopping, and at midblock pedestrian street crossings are permitted to equal the street or highway grade. • Detectable warning surfaces shall be provided, where a curb ramp, landing, or blended transition connects to a street. • Gratings, access covers, and other appurtenances shall not be located on curb ramps, landings, blended transitions, and gutters within the pedestrian access route. • Grade breaks shall not be permitted on the surface of curb ramps, blended transitions, landings, and gutter areas within the pedestrian access route. Surface slopes that meet at grade breaks shall be flush. • Running and cross slope at midblock crossings shall be permitted to be warped to meet street or highway grade.			

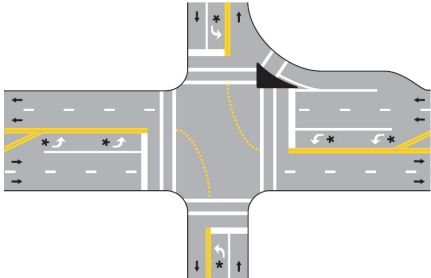
DETECTABLE WARNINGS DEVICES (TRUNCATED DOMES) (PROWAG R304)				
Figures/Examples	Requirements ¹	YES	NO	NA
A surface feature of truncated dome material built in or applied to the walking surface to advise of an upcoming change from pedestrian to vehicular way. 	• Detectable warnings shall consist of a surface of truncated domes aligned in a square or radial grid pattern complying with 2010 ADA Standards. Detectable warning surfaces shall contrast visually with adjacent gutter, street or highway, or walkway surfaces, either light-on-dark or dark-on-light. • Detectable warning surfaces shall extend 24 inches minimum in the direction of travel and the full width of the curb ramp (exclusive of flares), the landing, or the blended transition. Detectable warning surfaces are required where curb ramps, blended transitions, or landings provide a flush pedestrian connection to the street. • Sidewalk crossings of residential driveways should not generally be provided with detectable warnings, since the pedestrian right-of-way continues across most driveway aprons and overuse of detectable warning surfaces should be avoided in the interests of message clarity. However, where commercial driveways are provided with traffic control devices or otherwise are permitted to operate like public streets, detectable warnings should be provided at the junction between the pedestrian route and the street. • Perpendicular Curb Ramps: Where both ends of the bottom grade break are 5 feet or less from the back of curb, the detectable warning shall be located on the ramp surface at the bottom grade break. Where either end of the bottom grade break is more than 5 feet from the back of curb, the detectable warning shall be located on the lower landing. • Landings and Blended Transitions: The detectable warning shall be located on the landing or blended transition at the back of curb. • Rail Crossings: The detectable warning surface shall be located so that the edge nearest the rail crossing is 6 feet minimum and 15 feet maximum from the centerline of the nearest rail. The rows of truncated domes in a detectable warning surface shall be aligned to be parallel with the direction of wheelchair travel. • Detectable warnings at cut-through islands shall be located at the curb line in-line with the face of curb and shall be separated by a 2.0 foot minimum length of walkway without detectable warnings. Where the island has no curb, the detectable warning shall be located at the edge of roadway. • Exception, when detectable warnings are required by a manufacturer's installation specifications to be embedded into concrete with a surrounding edge, domes may be installed at less than the required full width. Under this exception, the detectable warning surface shall never be more than 2 inches from the edge of the curb ramp, the landing, or the blended transition.² • Detectable warnings shall not be stamped into concrete.			

ISLANDS AND MEDIANS (PROWAG R305.4)		YES	NO	NA
Figures/Examples	Requirements ¹			
 (a) cut through at island (b) curb ramp at island  	- Medians and pedestrian refuge islands in crosswalks shall contain a pedestrian access route, including passing space and connecting to each crosswalk. - Raised islands in crossings shall be cut through level with the street or have curb ramps and required landings at both sides. - All median island passage spaces shall provide a clear width of 5 feet minimum. ² - Medians and pedestrian refuge islands shall be 6.0 feet minimum in length in the direction of pedestrian travel. Roadway Grade Exception: The grade of pedestrian access routes within sidewalks is permitted to equal the general grade established for the adjacent street or highway. The cross slope of curb ramps, blended transitions, landings, and turning spaces at pedestrian street crossings without yield or stop control where vehicles can proceed through the intersection without slowing or stopping, and at midblock pedestrian street crossings are permitted to equal the street or highway grade. - Each curb ramp shall have a level area 48 inches long minimum by 36 inches wide minimum at the top of the curb ramp in the part of the island intersected by the crossings. - Each 48 inch minimum by 36 inch minimum area shall be oriented so that the 48 inch minimum length is in the direction of the running slope of the curb ramp it serves. The 48 inch minimum by 36 inch minimum areas and the accessible route shall be permitted to overlap. - Detectable warning surfaces shall be provided, where a curb ramp, landing, or blended transition connects to a street. Medians and pedestrian refuge islands shall have detectable warnings at curb ramps and blended transitions. - Detectable warnings at cut-through islands shall be located at the curb line in-line with the face of curb and shall be separated by a 2.0 foot minimum length of walkway without detectable warnings. Where the island has no curb, the detectable warning shall be located at the edge of roadway. - Gratings, access covers, and other appurtenances shall not be located on curb ramps, landings, blended transitions, and gutters within the pedestrian access route. - Grade breaks shall not be permitted on the surface of curb ramps, blended transitions, landings, and gutter areas within the pedestrian access route. Surface slopes that meet at grade breaks shall be flush.			

ACCESSIBLE PEDESTRIAN SIGNALS (PUSHBUTTONS) (PROWAG R306)

Figures/Examples	Requirements ¹	YES	NO	NA
    	- Each crosswalk with pedestrian signal indication shall have an accessible pedestrian signal which includes audible and vibrotactile indications of the WALK interval. Where a pedestrian pushbutton is provided, it shall be integrated into the accessible pedestrian signal. ← ON HOLD waiting for MoDOT Specs and APL - Accessible pedestrian signals shall be located so that the vibrotactile feature can be contacted from the level landing serving a curb ramp, if provided, or from a clear floor or ground space that is in line with the crosswalk line adjacent to the vehicle stop line. - Accessible pedestrian pushbuttons shall be located within a reach range complying with PROWAG 2005 R404. - A clear floor or ground space shall be provided at the pushbutton and shall connect to or overlap the pedestrian access route. Roadway Grade Exception: Clear spaces required at accessible pedestrian signals and pedestrian pushbuttons and at other accessible elements are permitted to have a running slope or cross slope consistent with the grade of the adjacent pedestrian access route. - Pedestrian signals shall comply with PROWAG 2005 R306. - Pushbuttons are a minimum 2 inches across in one dimension, raised (not recessed), contrast visually with the housing or mounting, and have a maximum force of 5 pounds to activate operable parts. - The control face of the pushbuttons is installed parallel to the direction of the crosswalk it serves. - The location of pushbuttons for new construction are within a longitudinal distance of 5 feet maximum from the crosswalk line, and 30 inches minimum to 6 feet maximum from the curb line. - For audible pedestrian signal devices only, pushbuttons are a minimum 10 feet apart at crossings and a minimum 5 feet apart at islands or medians. This minimum distance may be waived for audible pushbuttons in medians and islands with the use of voice commands. - Pushbuttons are located no higher than 42 inches from the ground and within 10 inch reach from a level paved landing with minimum dimensions of 48 inches x 30 inches positioned for a parallel approach to the pushbutton. For a forward approach space (30 x 48 inches) the allowed reach range is 0 inches. - Where pushbuttons for the visually impaired are installed, tactile signs are to be provided that meet ADA requirements.			

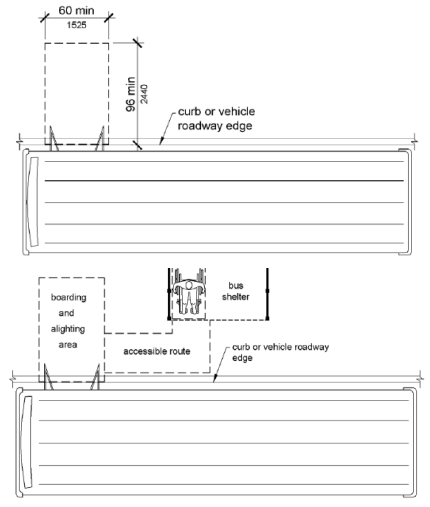
PEDESTRIAN STREET CROSSINGS (PROWAG R305)

Figures/Examples	Requirements ¹	YES	NO	NA
 	• Crosswalks shall contain a pedestrian access route that connects to departure and arrival walkways through any median or pedestrian refuge island. • Marked crosswalks shall be 6 feet wide minimum. • The grade of the pedestrian access route is permitted to equal the general grade established for the adjacent street or highway, except that where pedestrian access routes are contained within pedestrian street crossings a maximum grade of 5 percent is required. • A 5 percent maximum cross slope is specified for pedestrian access routes contained within pedestrian street crossings without yield or stop control. • Crossings with Stop Control: The cross slope shall be 2 percent maximum. • The cross slope at midblock crossings shall be permitted to be warped to meet street or highway grade. • The running slope shall be 5 percent maximum, measured parallel to the direction of pedestrian travel in the crosswalk. • Where pedestrian signals are provided at pedestrian street crossings, they shall include accessible pedestrian signals and pedestrian pushbuttons complying with sections 4E.08 through 4E.13 of the MUTCD. Operable parts shall comply with R403. (2011 PROWAG R209.1) ← ON HOLD waiting for MoDOT Specs and APL • Crosswalk pavement marking is 6 inches wide white. • Stop bar is at minimum 4 feet from the crosswalk. • Curb ramps at marked crossings shall be wholly contained within the markings, excluding any flared sides. • Gratings, access covers, and other appurtenances shall not be located on curb ramps, landings, blended transitions, and gutters within the pedestrian access route. • Grade breaks shall not be permitted on the surface of curb ramps, blended transitions, landings, and gutter areas within the pedestrian access route. Surface slopes that meet at grade breaks shall be flush. • Beyond the curb face, a clear space of 4.0 feet minimum by 4.0 feet minimum shall be provided within the width of the crosswalk and wholly outside the parallel vehicle travel lane.			

ALTERNATE CIRCULATION PATH (PROWAG R302)

Figures/Examples	Requirements ¹	YES	NO	NA
	• Alternate circulation paths shall contain a pedestrian access route. • To the maximum extent feasible, the alternate circulation path shall be provided on the same side of the street as the disrupted route. • Where the alternate circulation path is exposed to adjacent construction, excavation drop-offs, traffic, or other hazards, it shall be protected with a pedestrian barricade or channelizing device complying with MUTCD 6F-58, 6F-63, and 6F-66. • Pedestrian barricades and channelizing devices shall be continuous, stable, and non-flexible and shall consist of a wall, fence, or enclosures specified in section 6F-58, 6F-63, and 6F-66 of the MUTCD (incorporated by reference; see PROWAG 2005 R104.2.4). • A detectable continuous bottom edge shall be provided 2 inches maximum above the ground or walkway surface. • Devices shall provide a continuous surface or upper rail at 3.0 feet minimum above the ground or walkway surface. • Support members shall not protrude into the alternate circulation path.			

BUS BOARDING AND ALIGHTING AREAS (PROWAG R410)

Figures/Examples	Requirements ¹	YES	NO	NA
	• Bus stop boarding and alighting areas shall have a firm, stable surface. • Bus stop boarding and alighting areas shall provide a clear length of 8 feet minimum, measured perpendicular to the curb or vehicle roadway edge, and a clear width of 5 feet minimum, measured parallel to the vehicle roadway. • Bus stop boarding and alighting areas shall be connected to streets, sidewalks, or pedestrian paths by an accessible route. • Parallel to the roadway, the slope of the bus stop boarding and alighting area shall be the same as the roadway, to the maximum extent practicable. Perpendicular to the roadway, the slope of the bus stop boarding and alighting area shall not be steeper than 2 percent. • Bus shelters shall provide a minimum 30 inch by 48 inch clear floor or ground space entirely within the shelter. • Bus shelters shall be connected by an accessible route to a boarding and alighting area.			

A Policy Resolution of the Columbia Area Transportation Study Organization (CATSO) Adopting a Complete Streets Policy

WHEREAS, the term "Complete Streets" describes a comprehensive, integrated transportation network with infrastructure and design that allows safe and convenient travel along and across streets for all users, including pedestrians, bicyclists, persons with disabilities, motorists, movers of commercial goods, users and operators of public transportation and emergency service providers;

WHEREAS, the Columbia Area Transportation Study Organization acknowledges the benefits and value for the public health and welfare of reducing vehicle miles traveled and increasing transportation by walking, bicycling, and public transportation;

WHEREAS, the Columbia Area Transportation Study Organization recognizes that the planning and coordinated development of Complete Streets infrastructure provides benefits for local governments in the areas of infrastructure cost savings; public health; and environmental sustainability;

WHEREAS, the 2040 Long Range Transportation Plan adopted by the Coordinating Committee on February 27, 2014 recommends the Columbia Area Transportation Study Organization "Support the adoption of a Complete Streets policy for the Columbia Metro Area to reflect public input and LRTP emphasis on non-motorized transportation modes";

WHEREAS, the Columbia Area Transportation Study Organization therefore, in light of the foregoing benefits and considerations, wishes to state its commitment to a comprehensive and integrated transportation network promoting safe, equitable, and convenient travel for all users while preserving flexibility, recognizing community context, and using the latest and best design guidelines and standards;

NOW, THEREFORE, BE IT RESOLVED, by the Columbia Area Transportation Study Organization Coordinating Committee as follows:

1. That the Columbia Area Transportation Study Organization adopts a Complete Streets Policy by this policy resolution.

PASSED AND ADOPTED by the Columbia Area Transportation Study Organization Coordinating Committee on August 28, 2014.

Attest:



Mike Matthes, Chair, CATSO Coordinating Committee



Date:

City of Columbia

701 East Broadway, Columbia, Missouri 65201



Agenda Item Number: REP 96-15

Department Source: Community Development - Planning

To: City Council

From: City Manager & Staff

Council Meeting Date: 10/5/2015

Re: Case # 15-221: Bicycle & Pedestrian Commission Report on Complete Streets/Intersections

Documents Included With This Agenda Item

Council memo

Supporting documentation includes: Letters from Bicycle & Pedestrian Commission, Public Transit Advisory Commission, and Disabilities Commission

Executive Summary

This report consists of letters from the Bicycle & Pedestrian Commission, Disabilities Commission, and Public Transit Advisory Commission. The commissioners urge that the Council adopt a complete intersections policy to supplement/clarify the existing complete streets policy.

Discussion

The Bicycle & Pedestrian Commission is fully supportive of the current City street standards, adopted in 2004, which are in effect a "Complete Streets" policy. The Commission would like the street standards to include additional emphasis on intersections specifically, in order to ensure that intersection design is also comprehensive in its impact, effectively a "Complete Intersections" policy in accommodating all modes of travel. The Commission also has asked for support from the Public Transit Advisory Commission and the Disabilities Commission on this topic by means of the attached letters from those respective commissions. A "complete intersection" would include crosswalks on all four legs of the intersection and offer accessible crossings and connections for pedestrians, bicyclists, and the disabled.

Fiscal Impact

Short-Term Impact: NA

Long-Term Impact: NA

Vision, Strategic & Comprehensive Plan Impact

Vision Impact: Transportation

Strategic Plan Impact: Infrastructure...Connecting the Community

Comprehensive Plan Impact: Infrastructure, Mobility, Connectivity, and Accessibility

Suggested Council Action

Acceptance of the report.

City of Columbia

701 East Broadway, Columbia, Missouri 65201

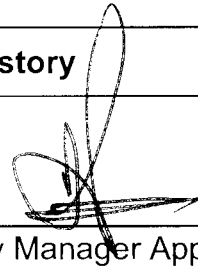


Legislative History

NA



Department Approved



City Manager Approved



SUPPORTING DOCUMENTS INCLUDED WITH THIS AGENDA ITEM ARE AS FOLLOWS:

Letters from Bicycle & Pedestrian Commission, Public Transit Advisory Commission,
and Disabilities Commission

Bicycle/Pedestrian Commission
City of Columbia, Missouri

Memorandum

To: Columbia City Council
From: Bicycle/Pedestrian Commission
Date: September 18, 2015
Subject: Complete Intersection Policy for the City of Columbia

Dear Council Members,

Over recent years, the City of Columbia has made great strides in developing a community that allows its citizens to safely travel to and from work, leisure, and other activities by a variety of transportation modes. These modes include motor vehicles, buses, bicycles, wheelchairs, and walking. While significant investments have been made to increase traffic safety, many intersections still pose serious hazards and barriers to travel without a motor vehicle. This also applies to the use of COMO Connect, since bus transportation requires walking, cycling, or wheeling to and from bus stops.

A truly walkable community provides a well-connected network of sidewalks and bike lanes throughout the metropolitan area. Such a network must include intersections to its full extent to increase traffic safety and connectivity for all participants. Recognizing the importance of improving safety within the City of Columbia, Mayor McDavid recently signed on to the U.S.DOT's Mayor's Challenge for Safer People, Safer Streets. This challenge calls for the adoption of a complete streets approach to provide safety and convenience, whether travelling by car, train, bicycle, wheelchair, or on foot.

As you are probably aware, there are numerous intersections within the Columbia metropolitan area, many of them on major roads, which are pinch points for those traveling by foot, bicycle, or wheelchair. For example, some intersections do not have crosswalks on each leg of the intersection. This is sometimes done in an effort to allocate dwindling resources in the areas of greatest need or to comply with MoDOT policy that requires connecting sidewalk on both sides of the street before crosswalks are installed.

The most efficient way to reduce gaps and barriers in our pedestrian and bicycling network is to design intersections to accommodate pedestrians and bicyclists when the intersection is being built, renovated, or maintained. This may include crosswalks, pedestrian walk signals, appropriate lighting, curb ramps, narrower crossing widths, and other design elements. The MoDOT policy to only install crosswalks to existing sidewalks is short-sighted and does not align with regional and City priorities to promote walking and bicycling. Just as the installation of a sidewalk will increase the likelihood of the addition of a crosswalk, the reverse is true. The City has an ordinance in place that requires each lot developed within the city limits to be equipped with a sidewalk. We want to hold the City, the County and the State to the same standards as private developers.

Just as Complete Streets are designed with consideration of the needs of all users of the roadway, intersections should be designed similarly. The Bicycle/Pedestrian Commission is thus asking City Council to expand our existing Complete Streets policy to specifically include intersections. The City maintains standard details for roadway cross sections and plan views. While these details include marking and signing plans for roundabouts, the City does not have similar details for traditional intersections. We hereby request that Council direct the Public Works Department to adopt similar standard details for intersections, compatible with the Complete Streets approach. Completion during the one-year timeframe of the Mayor's Challenge would go a long way towards fulfilling the goals of this initiative.

We appreciate the City's past efforts to provide improved connectivity and are looking forward to continued improvements.

Sincerely,

CITY OF COLUMBIA BICYCLE/PEDESTRIAN COMMISSION

August 26, 2015

Mayor Robert McDavid and Columbia Councilpersons
701 E. Broadway
Columbia, MO 65205

RE: "Complete Intersections" Policy for the City of Columbia

Dear Mayor McDavid and Columbia Councilpersons:

I'm writing on behalf of the Public Transit Advisory Commission (PTAC) to offer our unanimous support (passed at our August monthly meeting) of the Bicycle/Pedestrian Commission's request for the development of a "Complete Intersections" Policy to expand Columbia's Complete Streets Policy. Every transit trip in Columbia includes a walk at the beginning and the finish of that journey and "Complete Intersections" can only add to keeping our transit users safe. Mayor McDavid, you were one of our country's first Mayors to sign on to Transportation Secretary Foxx's' Mayor's Challenge for Safer People, Safer Streets, and we greatly appreciate that. That challenge calls for safety initiatives, including the adoption of a complete streets approach, which needs to include "Complete Intersections" to provide safety and convenience for all of our citizens, as well as addressing barriers to safety at our intersections.

Columbia needs a comprehensive approach to safety. A safe city is central to the quality of life for all of our citizens. Supporting the engineering work to accomplish "Complete Intersections" and construction coordination between Columbia and MODOt, will lead to a truly "walkable community", which is what we all want.

We ask you to join us, along with the Bicycle/Pedestrian Commission in our request to expand our existing Complete Streets policy to include intersections also. Complete Streets are designed with the needs of motorist's users of the roadway. The design of "Complete Intersections" should be included to address the needs of ALL users.

Please don't hesitate to contact me if you have any questions. Thank you very much for your time, consideration and support.

Cheryl Price

Cheryl Price

CHAIR, PUBLIC TRANSIT ADVISORY COUNCIL (PTAC)



CITY OF COLUMBIA, MISSOURI

Disabilities Commission

August 17, 2015

To: Mayor and Members of City Council

From: Columbia Disabilities Commission

Subject: Complete Intersection Policy for the City of Columbia

The Disabilities Commission is in support of expanding our existing Complete Streets policy to include intersections. Building complete intersections with crosswalks, pedestrian signals and curb ramps is consistent with this Commission's interests in expanding the community's safe and accessible pedestrian facilities for all members of the public. The Disabilities Commission supports the Bicycle/Pedestrian Commission's request for action.

Chuck Graham
Chair
Columbia Disabilities Commission

AN ORDINANCE

establishing a sidewalk maintenance and construction policy; and fixing the time when this ordinance shall become effective.

BE IT ORDAINED BY THE COUNCIL OF THE CITY OF COLUMBIA, MISSOURI, AS FOLLOWS:

SECTION 1. Policy Resolutions PR 354-82, PR 93-91A, R 386-80 and R 387-80 are hereby repealed and replaced with this ordinance.

SECTION 2. The City Manager shall periodically submit a list of sidewalk maintenance, repair and reconstruction priorities and funding recommendations to the City Council.

SECTION 3. The Director of Public Works is authorized to use city employees without specific City Council authorization to repair hazardous sidewalks less than one-half block in length.

SECTION 4. The following policies shall apply to maintenance, repair and construction of sidewalks in the central business district, which consists of the area bounded by College Avenue on the east, Elm Street and Elm Street extended on the south, Garth Avenue on the west, and Park Avenue and Park Avenue extended on the north:

- (1) Improvements shall conform to specifications for sidewalk, curb and guttering; plantings (including standard grates, soil mix and types of trees); conduits and outlets; and sidewalk furnishings established by the Director of Public Works.
- (2) Abutting property owners in the central business district shall be required to pay for fifty percent (50%) of defective sidewalk and curb and guttering replacement. Property owners shall also provide trenching for required conduits.
- (3) Unless donated by the abutting property owner, the City shall provide and pay for installation of: non-defective sidewalk replacement; trees and soil mix; grates; conduits, outlets; and street furnishings.
- (4) The City shall maintain all beautification projects within the right-of-way in the central business district.

(5) Approval by the Director of Public Works shall be required before any beautification project or improvement within the public right-of-way in the central business district is begun.

SECTION 5. The City shall be responsible for construction or repair of handicap ramps at the intersection of public streets or alleys.

SECTION 6. The City shall develop and maintain a Master Sidewalk Plan. Sidewalks shown on the plan shall be constructed at the City's expense, subject to the availability of funds, except that this provision shall not relieve any property owner of responsibilities for sidewalk construction associated with new development.

SECTION 7. Sections of sidewalks shown on the Master Sidewalk Plan in need of reconstruction shall be reconstructed at the expense of the property owner except that the City may pay up to one hundred percent (100%) of the cost of reconstruction subject to the availability of funds.

SECTION 8. Sections of sidewalks in single family areas or "affordable housing" areas shall be reconstructed up to one hundred percent (100%) by the City without tax billing the adjacent property owners.

SECTION 9. Sections of sidewalks in the Community Development Block Grant (CDBG) area will be constructed or reconstructed in the same manner as other areas except that CDBG funds will be used for the construction or reconstruction of sidewalks in the eligible areas whenever possible and property owners may obtain relief from any tax bills in the form of CDBG grants provided they meet residency and income eligibility requirements.

SECTION 10. Sections of sidewalks in subdivisions, platted after the enactment of the subdivision regulations requiring sidewalks on both sides of all streets shall be constructed at the property owners' expense, and if property owners fail to construct such sidewalks within a reasonable time after receiving notice, the sidewalks may be constructed by the City with special assessments levied against the properties for the entire cost of the construction.

SECTION 11. The cost for sections of sidewalks constructed or reconstructed as part of a street construction project will not be tax billed against adjacent property owners.

SECTION 12. This ordinance shall be in full force and effect from and after its passage.

PASSED this 3rd day of December, 2007.

Completed Curb Ramps Improvements:

The following list summarizes the curb ramps that were replaced or repaired in order to meet ADA standards in conjunction with the road segments that have been overlaid since 2015.

Work Completed Fall 2015 thru Spring 2016:

Street Name	From	To	# of Ramps
Bearfield Road	Old Nifong	Grindstone Parkway	28
Fairview Road	Chapel Hill Road	Malibu Court	12
Green Meadows Road	Lynwood Drive	Bethel Street	14
Broadway	Waugh Street	Waugh Street	1
Stewart Road	West Boulevard	Glenwood Avenue	8
Skylark Drive	Cumberland Road	Cumberland Road	2
Sunset Drive	Rollins Road		1
Hulen Drive	Luan Court	Bayonne Court	3
Shepard Boulevard	Audubon Drive	Danforth Drive	12
Total Number of Ramps Replaced =			81

Work Completed Fall 2016 through Spring 2017:

Street Name	From	To	# of Ramps
Highlands Parkway	Sutton Drive	Strathmore Drive	8
Larail Drive	Westbrook Way	Vista View/North Shore	13
Apple Tree Court	Southampton Drive		2
Shingo Court	Pineview Drive	Pineview Drive	4
Gene Drive	Shingo Court	Brown Station	3
Rollins Road	Stalcup Street	Rothwell Drive	14
Rollins Road	Scott's Branch Trail	Hulen Drive	21
Rollins Road	Martin Drive	Bourn Avenue	6
Oak Cliff Drive	Chapel Hill Road	Mahogany Street	7
Stewart Road	Glenwood Avenue	Providence Road	14
Remington Drive	Creasy Springs Road	Concrete	2
Dustin Drive	Bethel Street	Cedar Ridge	4
Glencairn Court	Glencairn Drive		2
Total Number of Ramps Replaced =			100

Work Completed Fall 2017 through Spring 2018:

Street Name	From	To	# of Ramps
Texas Ave	Creasy Springs Road	Garth Avenue	16
Worley Street	Lindy Lane	Entrance/Drive approach	2
Worley Street	Auburn Drive	Entrance/Drive Approach	2
Providence Road	Blue Ridge Road	Cheetah Drive	22
Blue Ridge Road	Garth Avenue	Caribou Drive	10
Chadwick Drive	Forum Boulevard	Concrete Section	1
Brown School Road	Rangeline Road	Interstate Drive	6
Glencarin Drive	Prestwick Drive	Kinlock Court	6
Torrey Pines Drive	Green Meadows Road	South End	4
Northridge Drive	Woodland Drive	Oakland Gravel Road	9
Leeway Drive	Woodland Drive	Brown Station Road	2
Laramie Court	Chadwick Drive	South End	2
Woodland Drive	Blue Ridge Road	Pine Drive	7
Shepard Boulevard	Audubon Drive		4
Olympic Boulevard	Hanover Boulevard	Clark Lane	15
Hanover Boulevard	Clark Lane	Rice Road	13
Total Number of Ramps Replaced =			121

Work Completed Fall 2018 through Spring 2019:

Street Name	From	To	# of Ramps
Forum Boulevard	Chapel Hill Road	Intersection	1
Bull Run Drive	Port Way	Roundabout	8
Clinton Drive	Broadway	Ash Street	2
Garth Avenue	Stewart Road	Broadway	9
Maple Grove Way	Apple Tree Lane	Bethel Street	2
Dustin Drive	Bethel Street	Cedar Ridge Drive	6
Glencairn Drive	Prestwick Drive	Intersection	2
Cocoa Court	Hanover Boulevard	South End	2
Thornridge Drive	S Cedar Lake Drive	Intersection	2
Cedar Ridge Drive	S Cedar Lake Drive	Intersection	2
Fourth Street	Wilkes Boulevard	Hickman Drive	12
10 th Street	Ash Street	Intersection	2
Garth Avenue	Allen	Intersection	2
10th Street	Park Avenue	Broadway	10
Godas Drive	Valley Creek Lane	Trikalla Drive	4
McKee Street	Ria Street	Orchard Lane	7
Total Number of Ramps Replaced =			73

Work Completed Fall 2019 through Spring 2020:

Street Name	From	To	# of Ramps
Elm Street	Providence Road	Hitt Street	9
Locust Street	4 th Street	6 th Street	10
Grace Ellen Drive	Oakland Gravel Rd	Oakland Gravel Rd	1
Dustin Drive	Dusting Court	Cedar Lake Court	2
Katy Lane	Limerick Lane	Intersection	2
Russell Boulevard	Broadway	Rollings Road	3
College Park Drive	Rollin Road	Oxford Drive	6
Smiley Lane	Derby Ridge Drive	Riviera Drive	8
Mayflower Drive	Iris Drive	Rose Drive	4
Iris Drive	Poppy Way	Intersection	2
Sheffield Court	Forum Boulevard	East End	2
Glencairn Drive	Whiteburn Drive	Intersection	2
Thornbrook Parkway	Beacon Falls	Regal Way	4
Total Number of Ramps Replaced =			55

Work Completed Fall 2020 through Spring 2021:

No curb ramps were replace or repaired in conjunction with the road segments that have been overlaid. During this timeframe, the City re-bid the term and supply sidewalk repair contract that is used for the contractors to complete the repairs and due to COVID, the process too much longer than anticipated.

Completed Roadway Improvement Projects:

The following list summarizes the roadway improvement projects that have been completed since 2015. The roadway improvements included construction of curb ramps, sidewalks, and/or crosswalks that meet ADA standards.

Year 2015:

Scott Blvd Phase III: This project included the total reconstruction of the roadway between Vawter School Road and Route KK. The reconstruction included bike lanes and sidewalk on each side of the road. Also, the project included a roundabout with crosswalks at the Scott Boulevard/Route KK intersection and a crosswalk with a pedestrian island at the elementary school.

Year 2017:

Discovery Drive Roadway Extension: This project included the extension of Discovery Drive to the south from the Discovery Parkway intersection. The project also included sidewalks and crosswalks with pedestrian islands at the intersection with Discovery Parkway.

Year 2018:

Vandiver and Parker Roundabout: This project included the construction of a roundabout at the intersection of Vandiver Drive with Parker Street. The construction included sidewalks, curb ramps, pedestrian islands, and crosswalks. The project also included removing a hump along Vandiver Drive to improve sight distance.

Year 2019:

Ballenger Lane Improvement: This project included the construction of 6-foot wide shoulders along both sides of Ballenger Lane between Ria Street and Mexico Gravel Road. The shoulders are designated for non-motorized use and tie in with subdivision sidewalks along the road corridor. Curb ramps were reconstructed at the sidewalks where needed.

Forum and Green Meadows Roundabout: This project included the construction of a roundabout at the intersection of Forum and Green Meadows. The construction included sidewalks, curb ramps, pedestrian islands, and crosswalks.

Year 2020:

Providence-Broadway Turn Lane: This project included the extension of the northbound to eastbound turn lane at the intersection of Providence Road and Broadway. The improvement included 10-foot wide sidewalk at back of curb along the roadway extension.

Keene and I-70 Drive Southeast Roundabout: This project included the construction of a roundabout at the intersection of Keene Street and I-70 Drive Southeast. The construction included sidewalks, curb ramps, pedestrian islands, and crosswalks.

Nifong and Sinclair Roundabout: This project included the construction of a roundabout at the intersection of Nifong Boulevard and Sinclair Road. The construction included sidewalks, curb ramps, pedestrian islands, and crosswalks.

Nifong and Old Mill Creek Roundabout: This project included the construction of a roundabout at the intersection of Nifong Boulevard and Old Mill Creek Road. The construction included sidewalks, curb ramps, pedestrian islands, and crosswalks.

Third Avenue Alley Restoration: This project included clearing and paving the Third Avenue Alley. The project included reconstructing the sidewalk at each end of the alley.

Year 2021:

Sinclair and Route K Roundabout: This project included the construction of a roundabout at the intersection of Sinclair Road, Old Plank Road, and Route K. The construction included sidewalks, curb ramps, pedestrian islands, and crosswalks.

Lenoir Street Improvement: This project included the reconstruction of the roadway to lessen the curve along the University property where Lenoir Street transitions to Discovery Drive. The reconstruction included bike lanes and sidewalk.

Discovery Parkway Extension: This project included the construction of a new roadway extending the northeast end of Discovery Parkway to Rolling Hills Road. The reconstruction included bike lanes on both sides of the road and a wide sidewalk along the northern side of the road.

Roadway Projects: Summary of ADA Improvements

Project Name	Sidewalk (LF)	Curb Ramp (#)	Pedestrian Signal	Crosswalk (LF)
Scott Blvd, Phase III	14,900	32	Flashing Beacon	295
Discovery Drive	290	2	NA	89
Vandiver and Parker	1,130	8	NA	420
Ballenger Lane	820	8	NA	0
Forum and Green Meadows	1,850	8	NA	220
Providence-Broadway	335	0	NA	0
Keene and I-70 Drive	485	5	NA	36
Nifong and Sinclair	1,755	8	NA	115
Nifong and Old Mill Creek	2,195	9	NA	105
Third Ave Alley	24	0	NA	0
Sinclair and Rt. K	1,250	8	NA	210
Lenoir Street	1,470	0	NA	0
Discovery Parkway	7,590	0	NA	0

Completed Sidewalk Improvement Projects:

The following list summarizes the sidewalk improvement projects that have been completed since 2015. The sidewalk improvements include construction of curb ramps, sidewalks, and/or crosswalks to meet ADA standards.

Year 2015:

Old Fire Station #7 Sidewalk: This project included the construction of 5-foot wide sidewalk along the frontage of the City property on South Providence outer roadway.

Fairview Sidewalk: This project included the construction of 6-foot wide sidewalk at back of curb along the east side of Fairview Road from Highland Drive to Broadway. The improvements also included construction of curb ramps at each intersection.

Bernadette Sidewalk: This project included the construction of 6-foot wide sidewalk at back of curb along the east side of Bernadette Drive from Ash Street to Tiger Lane. The improvements also included construction of curb ramps at each intersection.

Year 2016:

Avenue of the Columns: This project included the construction of brick sidewalk and crosswalk improvements along 8th Street from Walnut Street to Elm Street. The improvements included decorative bumpouts at intersections to reduce pedestrian crossing distance, decorative crosswalks, and new signals with countdown timers at the Elm Street intersection.

Garth Avenue Sidewalk – Worley to Sexton: This project included construction of 5-foot wide sidewalk along the east side of Garth Avenue between Worley Street and Sexton Road. The improvements also included construction of curb ramps at each intersection and signal improvements at the intersection of Garth Avenue and Worley Street.

Elleta Boulevard Sidewalk: This project included construction of 5-foot wide sidewalk along the south side of Elleta Boulevard from Rangeline Street eastward to the existing sidewalk. The improvements also included construction of curb ramps at the intersection.

Green Meadows Circle Sidewalk: This project included construction of 5-foot wide sidewalk along the south side of Green Meadows Circle along the frontage of City property (Fire Station #7).

Providence Road Boardwalk Replacement (MoDOT ROW): This project included construction to replace a collapsed boardwalk along Providence Road north of Stewart Road. Construction included a 6-foot wide concrete sidewalk with a handrail and retaining wall. The sideslope was planted with trees and shrubs.

Hominy Trail East (Phase II): This project included construction of 10-foot wide concrete shared-use path that connected the Hominy Trail Phase I at Woodridge subdivision to sidewalk in The Links subdivision. The project also includes a low-water bridge that connected to Rebel Hill Drive (Richland Heights Mobile Home Park).

Manor Drive Sidewalk: This project included the installation of 6-foot wide sidewalk at back of curb along the east side of Manor Drive from Rollins Road to Manor Court, then crossing to the west side of Manor Drive and continuing toward Broadway; finally tying into existing sidewalk near Broadway. The improvements also included construction of curb ramps at each intersection and a crosswalk where the sidewalk transitions from the east side to the west side of the road.

Forum Boulevard Pedestrian Bridge: This project included the installation of a 10-foot wide shared-use path from the MKT trail to the shoulder along Forum Boulevard near Wilsons Fitness. A pedestrian bridge was constructed across Hinkson Creek as part of the project.

Year 2017:

Worley Sidewalk and Bus Shelter: This project included construction of 5-foot wide sidewalk along the north side of Worley Street to replace existing failed sidewalk on City property and the installation of a bus shelter. The sidewalk tied into existing sidewalk on each end of the property.

Worley Crossing at Health Department: This project included construction of curb ramps, crosswalk, and flashing pedestrian beacons for crossing to the Health Department between the bus shelters on each side of the road along Worley Street.

Year 2018:

Clark Lane Sidewalk: This project included the construction of 6-foot wide sidewalk at back of curb along the north side of Clark Lane from Paris Road to east of Lambeth Drive. The improvements included construction of curb ramps at each intersection and stormwater improvements. The project also included sidewalk, crosswalks, and pedestrian signal improvements at the connection of Clark Lane with the Highway 63 Connector.

Bike Boulevard (MKT to Parkade): This project included installation of bike boulevard street markings and signage to connect the MKT trail to Parkade Center and to Hickman High School. The improvements also included the construction of 8-foot wide sidewalk along the north side of Worley Street from Alexander Avenue to Banks Avenue. At the intersection of Broadway and Aldeah Avenue curb ramps, a center pedestrian island, crosswalks, and flashing pedestrian beacons were installed. At the intersection of Providence Road with Forest Avenue curb ramps, a center pedestrian island, crosswalks, and a pedestrian signal were installed. At the intersection of Business Loop 70 with Parkade Boulevard, crosswalks and pedestrian signal improvements were installed. Finally, at the intersection of Worley Street and Alexander/Banks, the curb ramps were reconstructed.

Oakland Gravel Road Sidewalk: This project included construction of 6-foot wide sidewalk at back of curb along the west side of Oakland Gravel Road from Blue Ridge Road to Edris Drive. The improvements also included construction of curb ramps at each intersection.

Nifong Crossing at Woods Edge: This project included construction of curb ramps, a center pedestrian island, crosswalks, and flashing pedestrian beacons for crossing Nifong Boulevard to Mill Creek Elementary.

Chapel Hill Sidewalk: This project included construction of 5-foot wide sidewalk along the north side of Chapel Hill Road to fill in a sidewalk gap just east of the Scott Boulevard intersection.

Sinclair Road Sidewalk: This project included construction of 5-foot wide sidewalk along the east side of Sinclair Road starting at Muirfield Drive southward to the existing sidewalk. The improvements also included construction of a curb ramp at the intersection.

Year 2019:

Whitegate Sidewalk and Bus Shelter: This project included the construction of 5-foot wide sidewalk on the north side of Whitegate Drive east of Towne Drive.

Southampton and Sinclair Road Sidewalk Gaps: This project included the construction of 5-foot wide sidewalk to fill in sidewalk gaps in two locations. On Southampton Road, the gap was approximately 35 linear feet long along the backyards of 1805 and 1807 Kenilworth Drive. On Sinclair Road, the gap was approximately 65 linear feet long along the backyard of 5109 Covington Court.

Carter Lane Sidewalk: This project included the construction of 6-foot wide sidewalk along the back of curb and curbs ramps on the east side of Carter Lane between Huntridge Drive and Foxfire Drive.

Lynn, Oak, Sexton Sidewalk: This project included the construction of 6-foot wide sidewalk along the back of curb and curbs ramps to tie into existing sidewalk along the square block of Lynn Street, Oak Street, Sexton Road, and Garth Avenue.

Year 2020:

Shepard to Rollins Trail: This project included the construction of 10-foot wide shared-use path that connected Bluffdale Drive with Rollins Road. The project also included curb ramps at each end of the path.

Sinclair Road Sidewalk at Nifong: This project included the construction of 6-foot wide sidewalk along the back of curb on the east side of Sinclair Road between Southampton Drive and Nifong Boulevard.

Hitt Street Sidewalk: This project included the construction of 10-foot wide sidewalk with integral curb along the east side of Hitt Street between Locust Street and the alley. The project also included curb ramps at the intersection with Hitt Street.

McKee Street Sidewalk: This project included the construction of 5-foot wide sidewalk along the east side of McKee Street between Nick Court and the McKee Street Park. The project will also include curb ramps at the intersections.

Year 2021:

Leslie Lane Sidewalk: This project included the construction of 5-foot wide sidewalk along the north side of Leslie Lane between Parkade Boulevard and

Newton Drive. The project also included replacing the curb ramps at the Newton Drive intersection.

St. Charles Road Sidewalk: This project included the construction of 8-foot wide sidewalk along the back of curb on the north side of St. Charles Road between Demaret Drive and Battle Avenue. The project also included a crosswalk with a rapid flashing beacon at Demaret Drive.

Sidewalk Projects: Summary of ADA Improvements

Project Name	Sidewalk (LF)	Curb Ramp (#)	Pedestrian Signal	Crosswalk (LF)
Old Fire Station #7 Sidewalk	110	0	No	0
Fairview Sidewalk	1,025	2	No	0
Bernadette Sidewalk	680	2	No	0
Avenue of the Columns	640	8	Yes	125
Garth Sidewalk	700	10	Yes	51
Elleta Sidewalk	452	1	No	0
Green Meadows Sidewalk	295	0	No	0
Hominy Trail East (Phase II)	6,180	3	No	0
Manor Sidewalk	2,525	3	No	20
Forum Pedestrian Bridge	2,325	4	No	0
Worley Sidewalk	90	0	No	0
Worley at Health Dept	0	2	Yes	35
Clark Lane Sidewalk	3,750	21	Yes	185
Bike Blvd (MKT to Parkade)	200	17	Yes	270
Oakland Gravel Sidewalk	700	4	No	0
Nifong Crossing-Woods Edge	0	2	Yes	30
Chapel Hill Sidewalk	480	0	No	0
Sinclair Sidewalk (Muirfield)	655	1	No	0
Whitegate Sidewalk	1,890	2	No	0
Southampton & Sinclair Gaps	0	0	No	0

Carter Lane Sidewalk	925	7	No	0
Lynn, Oak, Sexton Sidewalk	950	2	No	0
Shepard to Rollins Trail	3,170	2	No	0
Sinclair Sidewalk (Nifong)	2,575	1	No	0
Hitt Street Sidewalk	130	1	No	0
McKee Street Sidewalk	1,215	2	No	0
Leslie Lane Sidewalk	800	2	No	0
St. Charles Sidewalk	3,205	4	Yes	48

Completed Signalized Intersection Improvement Projects:

The following list summarizes the signalized intersection improvement projects that have been completed since 2015. The signalized intersection improvements have been completed as standalone projects or as part of larger roadway improvement projects. The improvements include installation or upgrade of curb ramps, crosswalks, and push buttons to meet ADA standards.

Year 2015:

Collage Avenue Crosswalks (MoDOT ROW): This project included the installation of a barrier median on College Avenue (south of University Avenue to north of Rosemary Lane); plus installation of two mid-block pedestrian crosswalks. At each mid-block crosswalk, the High-intensity Activated Crosswalk beacons (HAWK) signalized crossing were used. The HAWK signal stops traffic to allow pedestrians to cross College Avenue.

Collage and Broadway Pedestrian Signals (MoDOT ROW): This project included the installation of audible pedestrian signals on all corners of the intersection of Collage Avenue and Broadway. The signals included audible countdown timers similar to other intersections around Columbia.

Year 2016:

Worley and Clinkscates Intersection Improvements: This project included the installation of crosswalks and curb ramps on all four legs of the intersection of Worley Street and Clinkscates Road. The project also included new signal equipment including audible pedestrian signals with countdown timers.

Year 2017:

Stadium and Old 63 Intersection Improvements (MoDOT ROW): This project included the installation of sidewalks, curb ramps, crosswalks, pedestrian islands, and new signals with pedestrian countdown timers at the intersection of Stadium Boulevard and Old Highway 63.

Waco and Route B Intersection Improvements (MoDOT ROW): This project included the installation of sidewalks, curb ramps, crosswalks, pedestrian islands, and signals with pedestrian countdown timers at the intersection of Waco Road and State Route B.

Providence Road Improvements – Stewart to Stadium (MoDOT ROW): This project included the improvements at the intersections of Providence Road with

Turner Avenue, Rollins Street, Burnam Avenue, Bingham Road, Kentucky Boulevard, and Brandon Road. Curb ramps, crosswalks, and pedestrian islands were constructed at each intersection. The intersections of Turner/Providence and Burnam/Providence also included the installation of audible pedestrian signals with countdown timers. In addition, existing sidewalk was reconstructed where acceleration and deceleration lanes were constructed. Finally, 6-foot wide sidewalk at back of curb was constructed along Burnam Avenue between Providence Road and Birch Road.

Worley at the Health Department): This project included the installation of curb ramps, crosswalk, and pedestrian flashing beacons crossing Worley to connect the two bus stops at the City/County Health Department.

Year 2018:

Clark Lane Sidewalk at Highway 63 Connector (MoDOT ROW): This project included the installation of sidewalks, curb ramps, crosswalks, pedestrian islands, and pedestrian signals on the north crossing of the Highway 63 Connector at Clark Lane. The project also included sidewalk along Clark Lane.

Bike Boulevard (MKT to Parkade) (MoDOT ROW/City ROW): This project included the installation of Bike Boulevard street markings and signage to connect the MKT trail to Parkade Center and to Hickman High School. At the intersection of Broadway and Aldeah Avenue curb ramps, a center pedestrian island, crosswalks, and flashing pedestrian beacons were installed. At the intersection of Providence Road with Forest Avenue curb ramps, a center pedestrian island, crosswalks, and the pedestrian signal were installed. The project also included sidewalk, crosswalks, and pedestrian signal improvements at the intersection of Business Loop 70 with Parkade Boulevard.

Year 2019:

Nifong at Woods Edge Road: This project included the installation of curb ramps, crosswalk, a pedestrian island, and pedestrian flashing beacons crossing Nifong at Woods Edge Road to serve Mill Creek Elementary School.

Year 2020:

None

Year 2021:

Rangeline (Route 763) and Smiley Intersection Improvements (MoDOT ROW):

This project included the installation of audible pedestrian signals and replacing curb ramps and crosswalks at the intersection of Rangeline Street and Smiley Lane.

Signal Projects: Summary of Improvements (in City ROW)

Project Name	Sidewalk (LF)	Curb Ramp (#)	Pedestrian Signal	Crosswalk (LF)
Worley and Clinkscates	90	4	Intersection	150
Worley at Health Department		2	Flashing Beacon	36
Broadway and Aldeah		2	Flashing Beacon	50
Nifong at Woods Edge Rd		2	Flashing Beacon	45

Completed Bus Shelter Installation Projects:

The following list summarizes the bus shelter projects that have been completed since 2016. The bus shelter installations include the construction of the shelter pad and in some cases adjoining sidewalk to meet ADA standards. The list also includes repair of existing bus shelter pads.

Year 2016:

Conley Road (East Side)
Worley and Woodlawn
Forum and Nifong
Worley and Oak
Worley and Garth (Includes sidewalk)

Year 2017:

Broadway west of Stadium
Worley at the Health Department (Includes crosswalk, curb ramps, and flashing pedestrian beacon) (2 shelters)
Southampton at University Medical Center

Year 2018:

Conley Road (West Side)
Bernadette at the Holiday Inn
White Gate (Parks and Recreation property, includes sidewalk)

Year 2019:

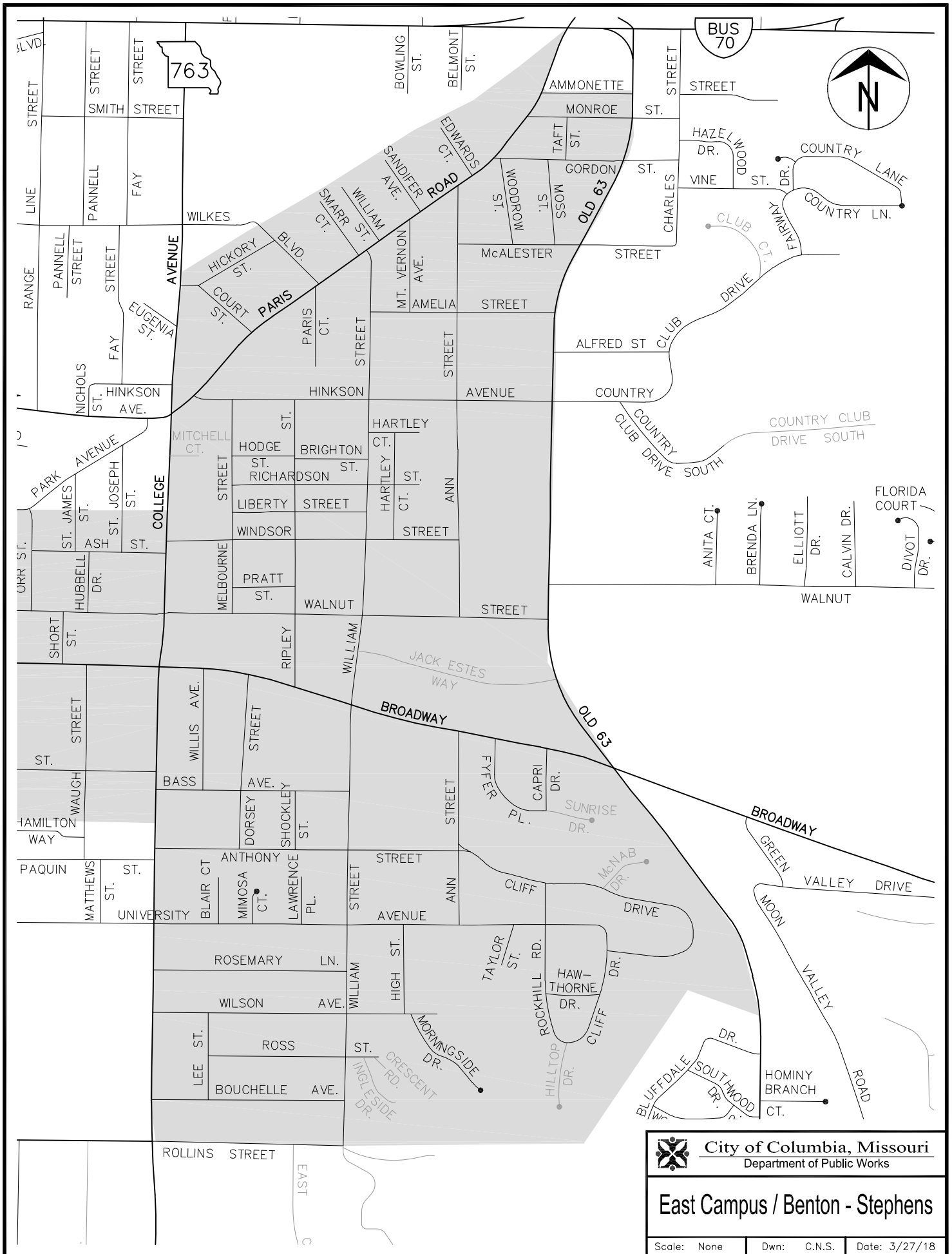
Broadway at Broadway Shopping Center
Clark Lane at Lakeview Mall
Providence/Carter Lane
Worley Street at Lasalle Lane (Repair of existing boarding pad and sidewalk)

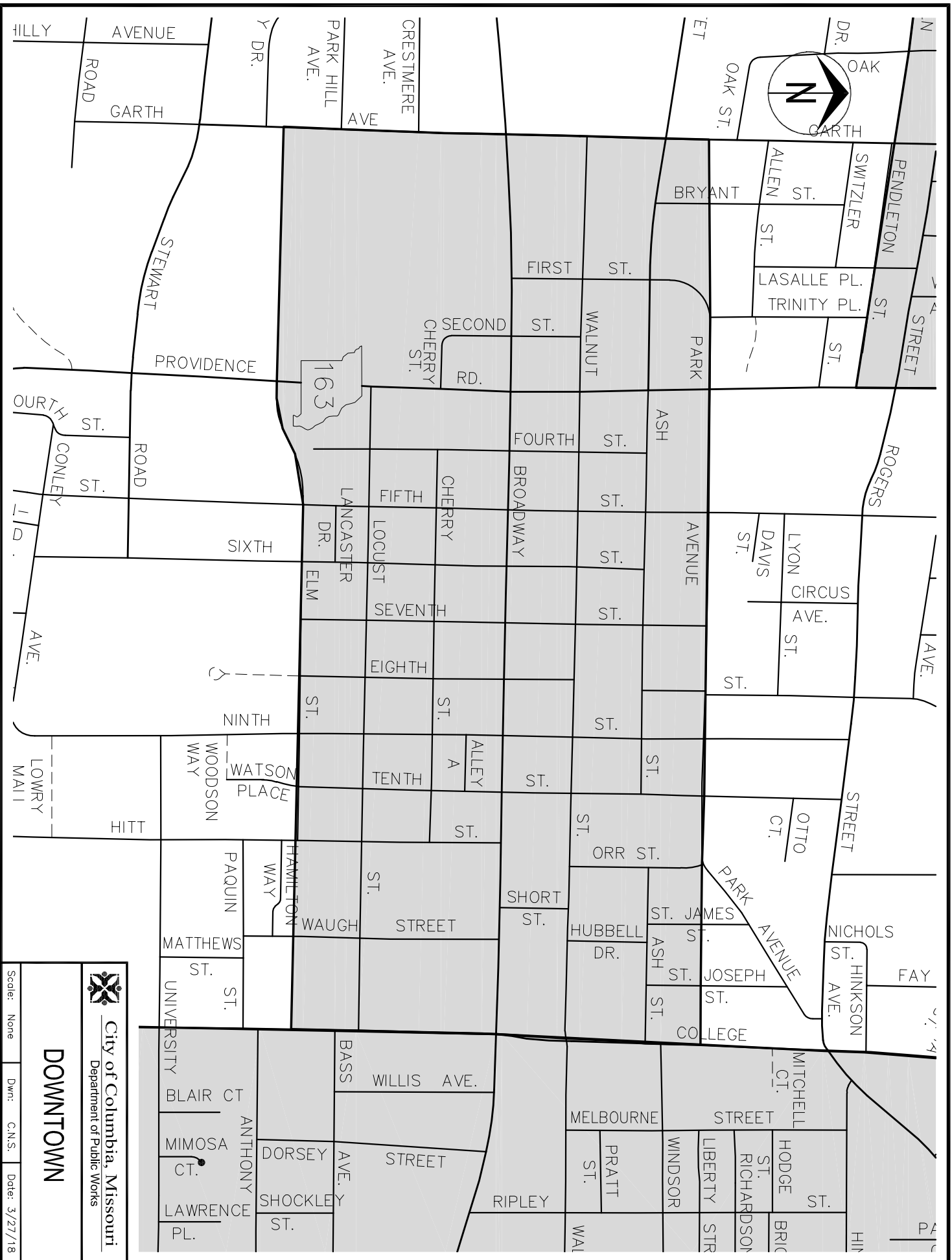
Year 2020:

Clark Lane at Pine Grove Village

Year 2021:

Worley Street at the Health Department (south side of Worley) replaced existing bus shelter with a MU student designed larger/eco-friendly bus shelter.



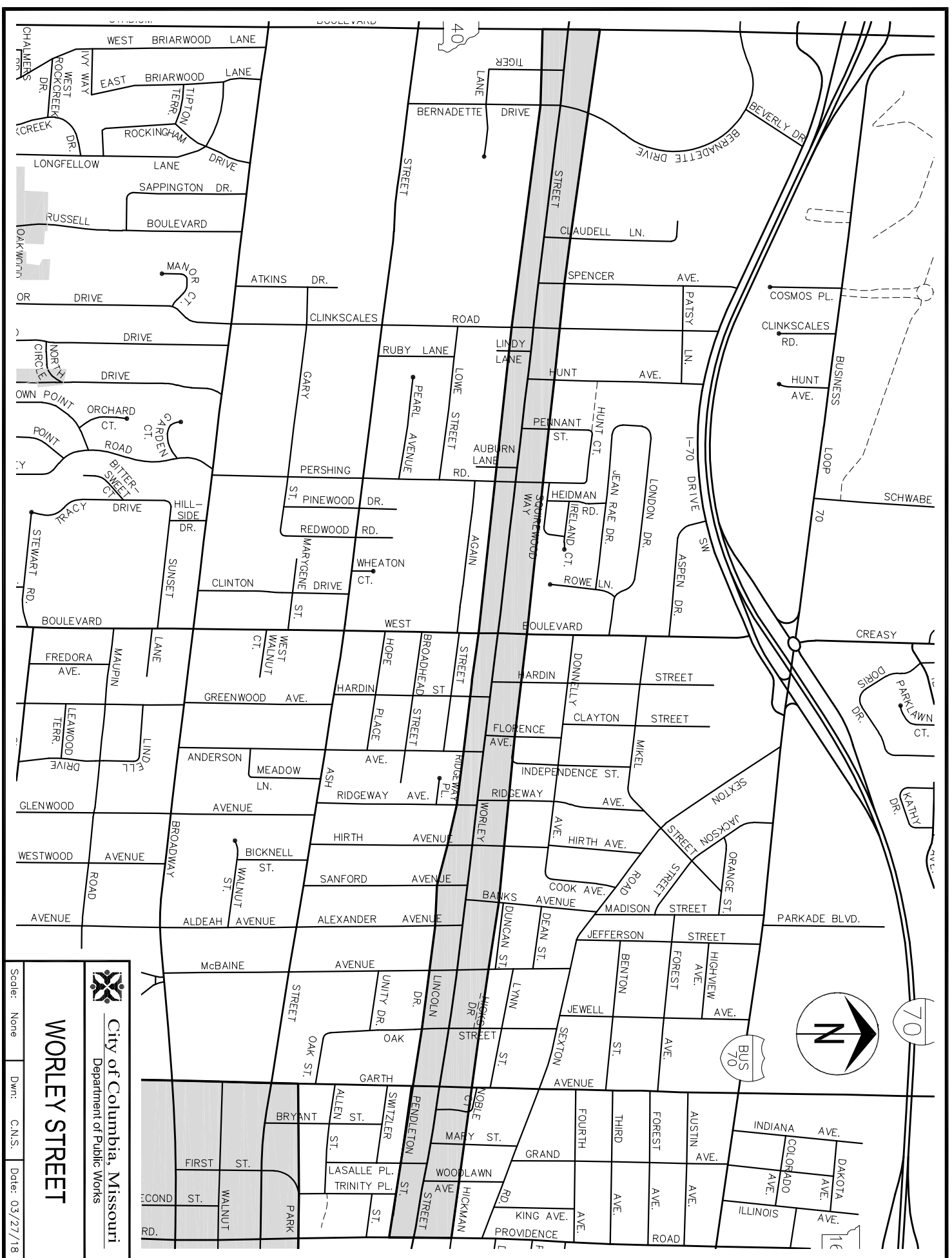


City of Columbia, Missouri
Department of Public Works

DOWNTOWN

Scale: None	Dwn: C.N.S.	Date: 3/27/18
-------------	-------------	---------------

Inventory completed.



Inventory Checklists and Rankings:

The following shows the checklist used to inventory the sidewalk facilities. In order to inventory the pedestrian facilities, Public Works staff uses an app developed by the GIS Department to record and rank particular features of each facility.

Sidewalk and Driveway Inventoried Information:

Sidewalk Width: Input width in inches
Cross Slope: Input cross slope in percent
Obstruction: Input obstruction location, type, and any additional measurements.*
Photographs and notes can be added if needed for clarification.

Curb Ramp Inventoried Information:

Ramp Width: Input width in inches
Ramp Length: Input length in inches
Running Slope: Input running slope in percent
Cross Slope: Input cross slope in percent
Truncated Domes: Pick Yes or No
Obstruction: Input obstruction location, type, and any additional measurements.*
Photographs and notes can be added if needed for clarification.

Signalized Pedestrian Crossing Inventoried Information:

Type of Crossing: Pick Signalized or Flashing Beacon
Audible Features: Pick Yes or No
Height of Button: Input height in inches
Distance from Landing: Input distance in inches
Parallel to Crosswalk: Pick Yes or No
Photographs and notes can be added if needed for clarification.

Bus Shelter Inventoried Information:

Boarding Pad Length: Input length in inches
Boarding Pad Width: Input width in inches
Boarding Pad Running Slope: Input running slope in percent
Shelter Clear Floor Width: Input clear floor width in inches
Shelter Clear Floor Length: Input clear floor length in inches
Photographs and notes can be added if needed for clarification.

*Sidewalk Obstructions:

Deficiency Type: Pick from the following:

- Significant Cross Slope
Input cross slope in percent
- Significant Running Slope
Input running slope in percent
- Trip Hazard
Input trip height in inches
- Gap/Crack Hazard
Input crack width in inches
- Needs Landing
Pick Top or Bottom
- Protruding Object/Obstruction (Vegetation, Utility Pole, Other)
Input Protruding Reach in inches
Input Protruding Vertical in inches

Photographs and notes can be added if needed for clarification.

The following shows the rankings used to inventory the sidewalk facilities.

Sidewalk and Driveway Ranking:

Width Rating		Cross Slope Rating				Ranking		
Width Range (in)		Rating	Cross Slope Range (%)		Rating	Total Rating Range		Ranking
Low	High		Low	High		Low	High	
60	-	0	0	2	0	0	0	Compliant
48	59	1	2.01	4	1	1	4	Substantially Compliant
36	47	3	4.01	5	3	5	10	Correction Recommended
-	35	5	5.01	-	5			

Curb Ramp Ranking:

Ramp Width Rating			*Ramp Running Slope Rating			Ramp Cross Slope Rating		
Width Range		Rating	Running Slope Range		Rating	Cross Slope Range		Rating
Low	High		Low	High		Low	High	
48	-	0	0	4.99	0	0	1.99	0
36	47	2	5	8.33	0	2	3.99	1
0	35	5	8.34	10.99	3	4	5.99	3
			11	-	5	6	-	5

*A ramp is allowed to exceed 8.33% running slope if it is > 15' long

Ramp Obstructions Rating		Ramp Dome Type Rating		Ranking		
Obstructions	Rating	Dome Type	Rating	Total Rating Range		Ranking
				Low	High	
0	0	Rubber	0	0	0	Compliant
1	1	Stamped	2	1	4	Substantially Compliant
2	3	None	5	5	25	Correction Recommended
3	5					

Pedestrian Crossing Ranking:

Height Rating		Distance Rating		Parallel Rating	
Button < 48" high?	Rating	Button <10" from landing?	Rating	Button parallel to crossing?	Rating
Yes	0	Yes	0	Yes	0
no	1	No	1	No	1

Ranking		
Total Rating Range		Ranking
Low	High	
0	0	Compliant
1	2	Substantially Compliant
3		Correction Recommended

Bus Shelter Ranking:

Pad Length Rating			Pad Width Rating			Pad Slope Rating		
Pad Length Range (in)		Rating	Pad Width Range (in)		Rating	Pad Slope Range (%)		Rating
Low	High		Low	High		Low	High	
96	-	0	60	-	0	0	2	0
84	95	2	48	59	1	2.01	3	1
72	83	3	36	47	3	3.01	4	2
60	71	4	0	35	5	4.01	5	3
0	59	5				5.01	-	5

Shelter Width Rating			Shelter Length Rating			Ranking		
Shelter Width Range (in)		Rating	Shelter Length Range (in)		Rating	Total Rating Range		Ranking
Low	High		Low	High		Low	High	
30	-	0	48	-	0	0	0	Compliant
24	29	3	36	47	3	1	4	Substantially Compliant
0	23	5	0	35	5	5	25	Correction Recommended

Sidewalk Obstructions Ranking:

- **Significant Cross Slope:** Quantity divided by the following criteria.
 - 2% to 4% (*Substantially Compliant*)
 - 4.1% to 10% (*Correction Recommended*)
 - Greater than 10% (*Correction Recommended*)
- **Significant Running Slope:** Quantity divided by the following criteria.
 - 5% to 7.9% (*Substantially Compliant*)
 - 8% to 10% (*Correction Recommended*)
 - Greater than 10% (*Correction Recommended*)
- **Trip Hazard:** Quantity divided by the following criteria.
 - 0.25 inches to 0.5 inches (*Substantially Compliant*)
 - 0.6 inches to 1 inch (*Substantially Compliant*)
 - Greater than 1 inch (*Correction Recommended*)
- **Gap/Crack Hazard:** Quantity divided by the following criteria.
 - 0.5 inches to 1 inch (*Substantially Compliant*)
 - 1.1 inches to 2 inches (*Correction Recommended*)
 - Greater than 2 inches (*Correction Recommended*)
- **Needs Landing (Top or Bottom):** Total quantity, *Substantially Compliant* or *Correction Recommended* will be determined per field review of each site.
- **Protruding Object/Obstruction (Vegetation, Utility Pole, Other):** Quantity divided into Vegetation or Fixed Object, *Substantially Compliant* or *Correction Recommended* will be determined per field review of each site.

Inventory Summary:

The following summarizes the inventories completed for each structure type.

Sidewalks:

In 2018, there were a total of 1867 sidewalk sections inventoried. Of those sidewalks, 687 segments were ranked as *Compliant*, 1124 segments were ranked as *Substantially Compliant*, and 56 segments were ranked as *Correction Recommended*.

No additional sidewalk sections were inventoried using the app in 2019, 2020, or 2021, but existing sidewalk segments are evaluated when designing road and sidewalk improvement projects and repairs to the existing sidewalks are included in the design.

On average, it costs approximately \$5,500 per location to repair the sidewalk when replacing a block run of sidewalk. Thus, from the locations inventoried and ranked as *Correction Recommended*, the approximate cost for the sidewalk replacement is \$308,000.

Driveways:

In 2018, there were a total of 1203 driveway sections inventoried. Of those driveways, 287 segments were ranked as *Compliant*, 637 segments were ranked as *Substantially Compliant*, and 279 segments were ranked as *Correction Recommended*.

No additional driveway sections were inventoried using the app in 2019, 2020, or 2021, but existing driveway sections are evaluated when designing road and sidewalk improvement projects and repairs to the existing driveway segments are included in the design.

On average, it costs approximately \$6,500 per location to repair the driveway. Thus, from the locations inventoried and ranked as *Correction Recommended*, the approximate cost for the driveway repairs is \$1,813,500.

Curb Ramps:

In 2018, there were a total of 645 curb ramps inventoried. Of those curb ramps, 89 segments were ranked as *Compliant*, 186 segments were ranked as *Substantially Compliant*, and 370 segments were ranked as *Correction Recommended*.

No additional curb ramps were inventoried using the app in 2019, 2020, or 2021, but various curb ramps have been evaluated yearly with the pavement management program. As Public Works complete asphalt overlay projects each summer, staff evaluates the curb ramps along the road corridor that was overlain to determine which curb ramps do not meet ADA requirements. These curb ramps are then added to the list to be replace over the next few years.

On average, it costs approximately \$1,300 per location to repair each curb ramp. Thus, from the locations inventoried and ranked as *Correction Recommended*, the approximate cost for the curb ramp repairs is \$481,000.

Signalized Pedestrian Crossings:

In 2018, there were a total of 242 signalized pedestrian crossing points inventoried. Of those crossing points, 182 points were ranked as *Compliant*, 60 point were ranked as *Substantially Compliant*, and 0 points were ranked as *Correction Recommended*.

All the City maintained signalized pedestrian crossing have been evaluated. As Public Works installs additional crossings, they are installed to meet ADA requirements.

The City is working to improve existing signalized crossings with audible pedestrian signals (APS). The City has two intersections under design to be improved with APS. The average cost to improve an intersection with APS is \$80,000. Thus, the total estimated cost to improve both intersections is \$160,000.

Bus Shelters:

In 2018, there were a total of 35 bus shelter pads were inventoried. Of those bus shelter pads, 14 pads were ranked as *Compliant*, 15 pads were ranked as *Substantially Compliant*, and 6 pads were ranked as *Correction Recommended*.

All the City maintained bus shelters have been evaluated. As Public Works installs additional bus shelter pads, they are installed to meet ADA requirements.

The City reduced the bus routes in 2019 due to budget and ridership. Thus, of the 6 pads ranked as *Correction Recommended*, only two remain in the bus system. One of the pads has been repaired. The estimated cost for repairing the other bus shelter pad is \$5,000.

Obstructions:

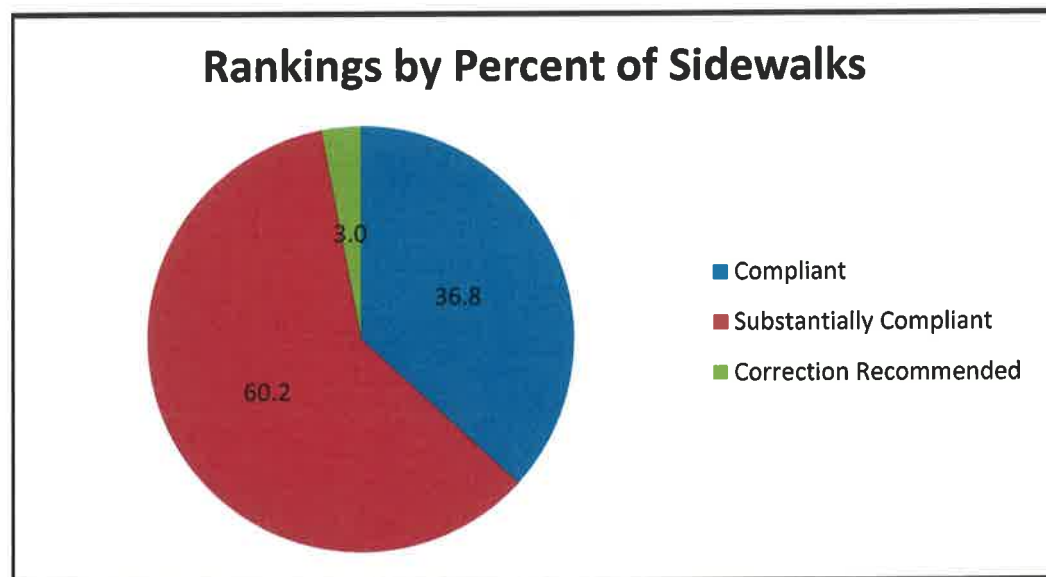
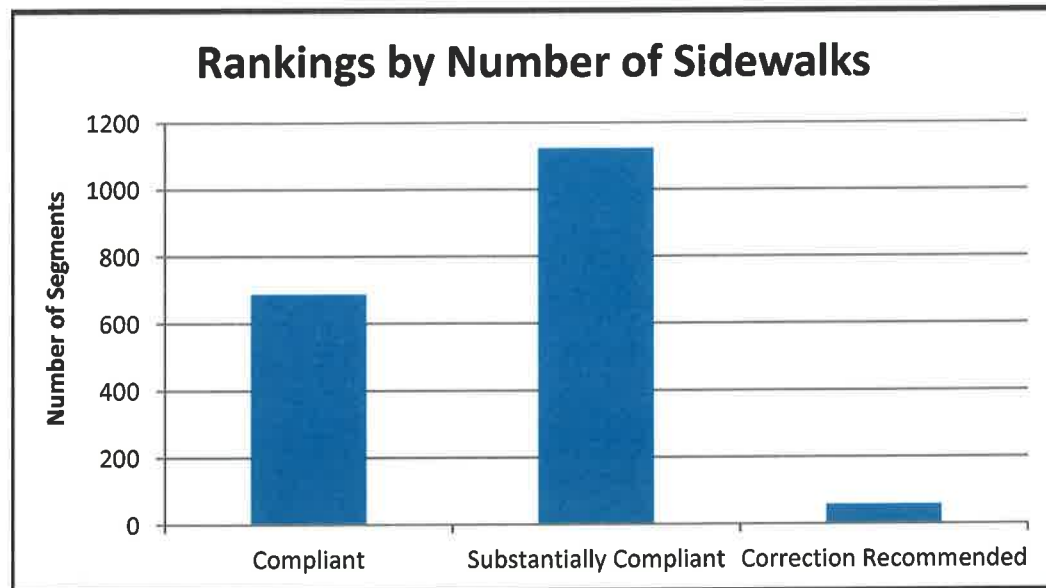
In 2018, there were a total of 4892 obstructions inventoried. Of those obstructions that ranked as *Correction Recommended*, 84 had a significant cross slope, 66 had a significant running slope, 2,420 had a trip hazard, 471 had a gap or crack hazard, 116 needed a bottom landing, 156 needed a top landing, and 236 had a fixed protruding object.

On average, it costs approximately \$800 per location to repair each obstruction that is ranked as *Correction Recommended*. Thus, from the locations inventoried and ranked as *Correction Recommended*, the approximate cost for the obstruction repairs is \$2,839,200.

Sidewalk Summary

Sidewalk Ranking	Number of Sidewalks	Percent of Sidewalks
Compliant	687	36.8
Substantially Compliant	1124	60.2
Correction Recommended	56	3.0
Total	1867	100

Average Cost per Sidewalk = \$5,500
Total Estimated Cost = \$308,000

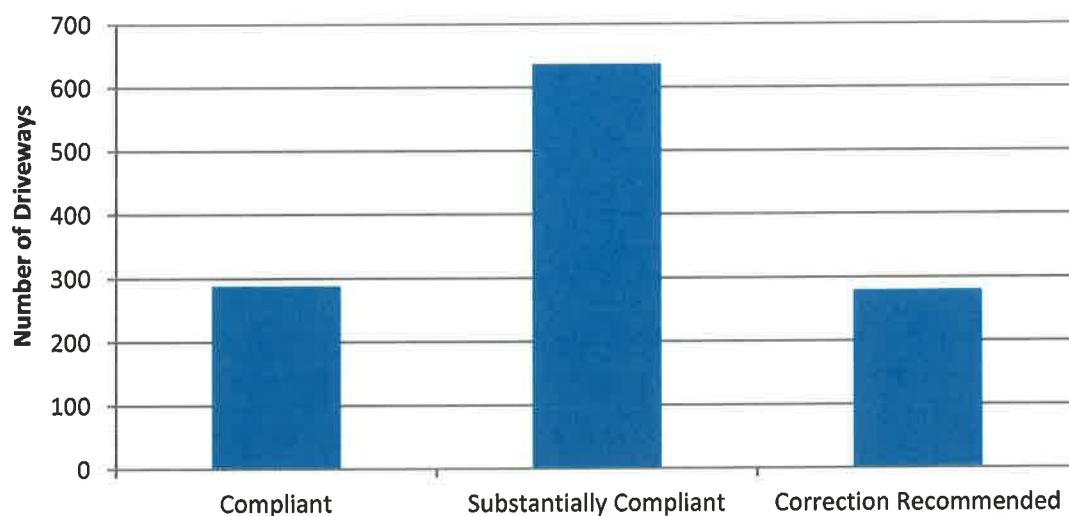


Driveway Summary

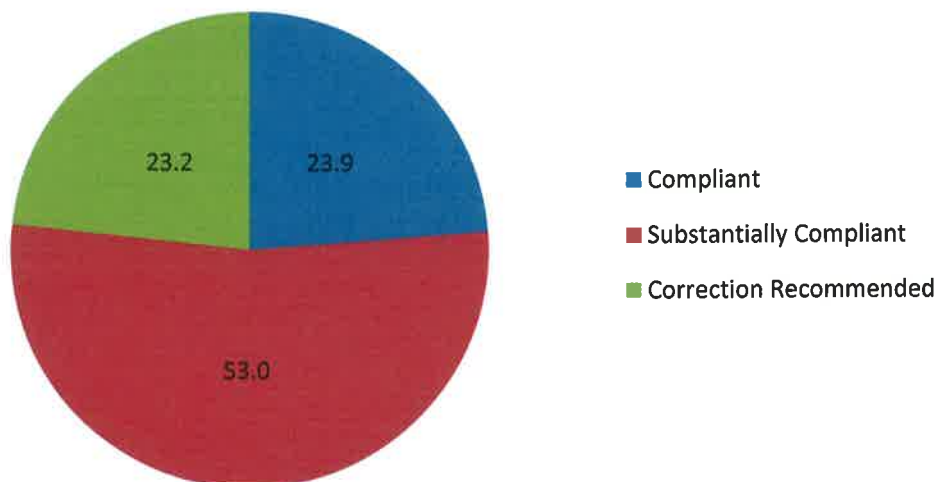
Driveway Ranking	Number of Driveways	Percent of Driveways
Compliant	287	23.9
Substantially Compliant	637	53.0
Correction Recommended	279	23.2
Total	1203	100

Average Cost per Driveway = \$6,500
 Total Estimated Cost = \$1,813,500

Rankings by Number of Driveways



Rankings by Percent of Driveways

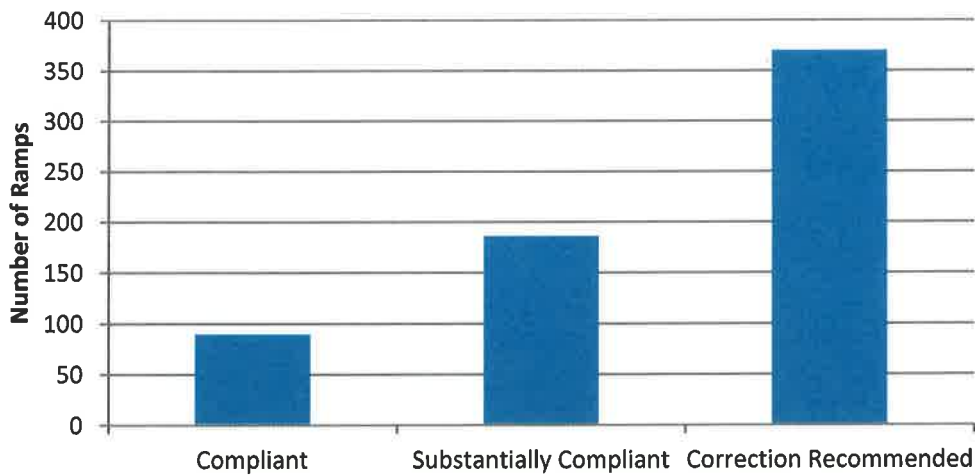


Curb Ramp Summary

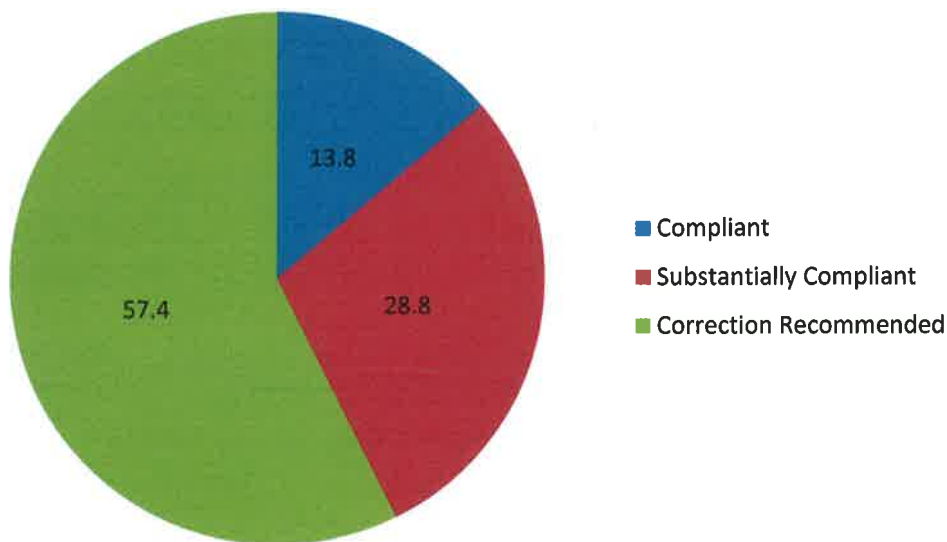
Ramp Ranking	Number of Ramps	Percent of Ramps
Compliant	89	13.8
Substantially Compliant	186	28.8
Correction Recommended	370	57.4
Total	645	100

Average Cost per Ramp = \$1,300
Total Estimated Cost = \$481,000

Rankings by Number of Ramps



Rankings by Percent of Ramps

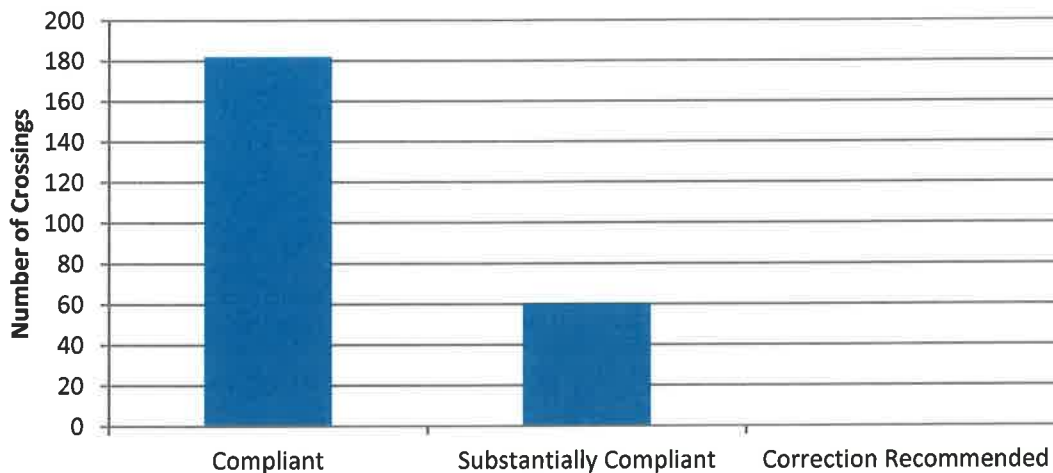


Signalized Pedestrian Crossing Summary

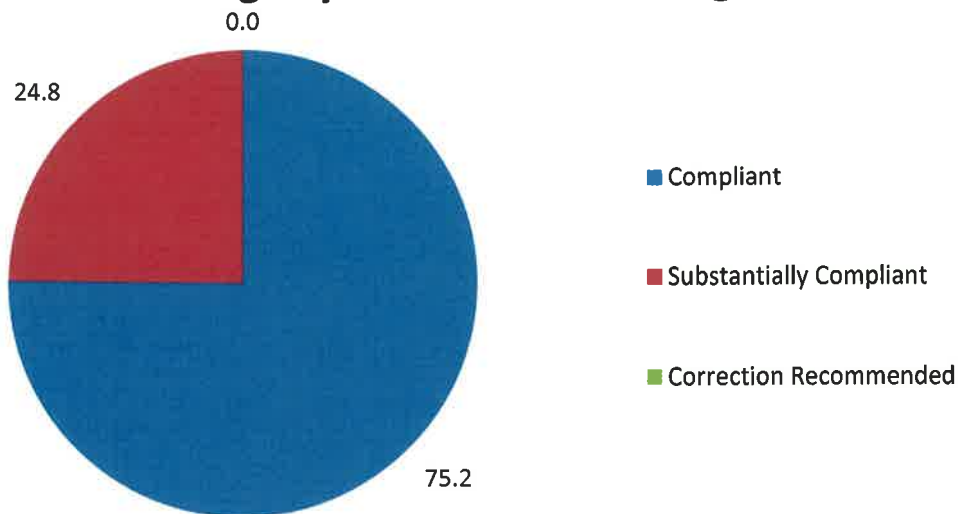
Crossing Ranking	Number of Crossings	Percent of Crossings
Compliant	182	75.2
Substantially Compliant	60	24.8
Correction Recommended	0	0.0
Total	242	100

Will spend approximately \$70,000 per intersection to add audible signals and improve curb ramps.

Rankings by Number of Crossings



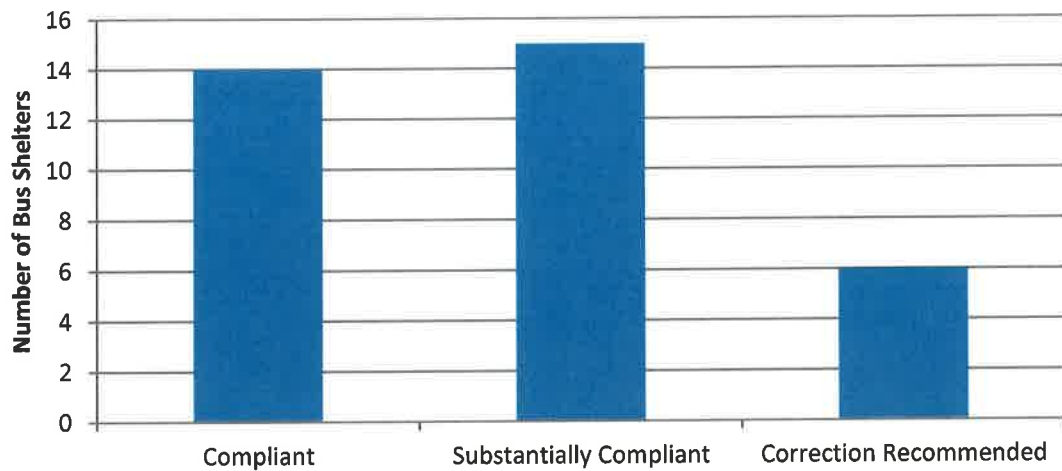
Rankings by Percent of Crossings



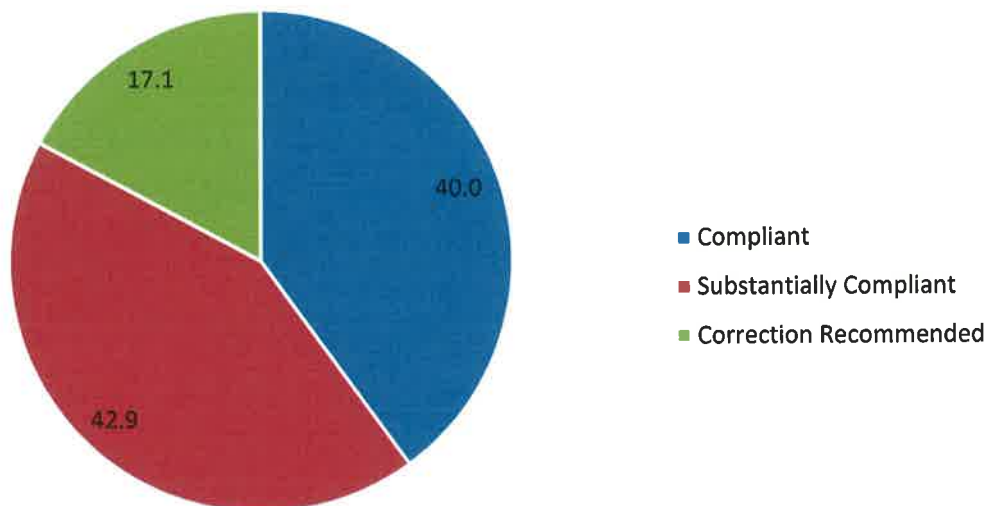
Bus Shelter Summary

Shelter Ranking	Number of Shelters	Percent of Shelters
Compliant	14	40.0
Substantially Compliant	15	42.9
Correction Recommended	6	17.1
Total	35	100

Rankings by Number of Bus Shelters



Rankings by Percent of Bus Shelters

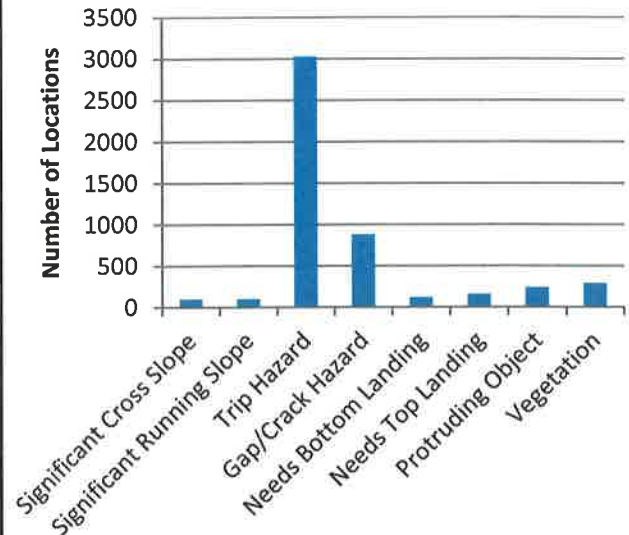


Obstructions Summary

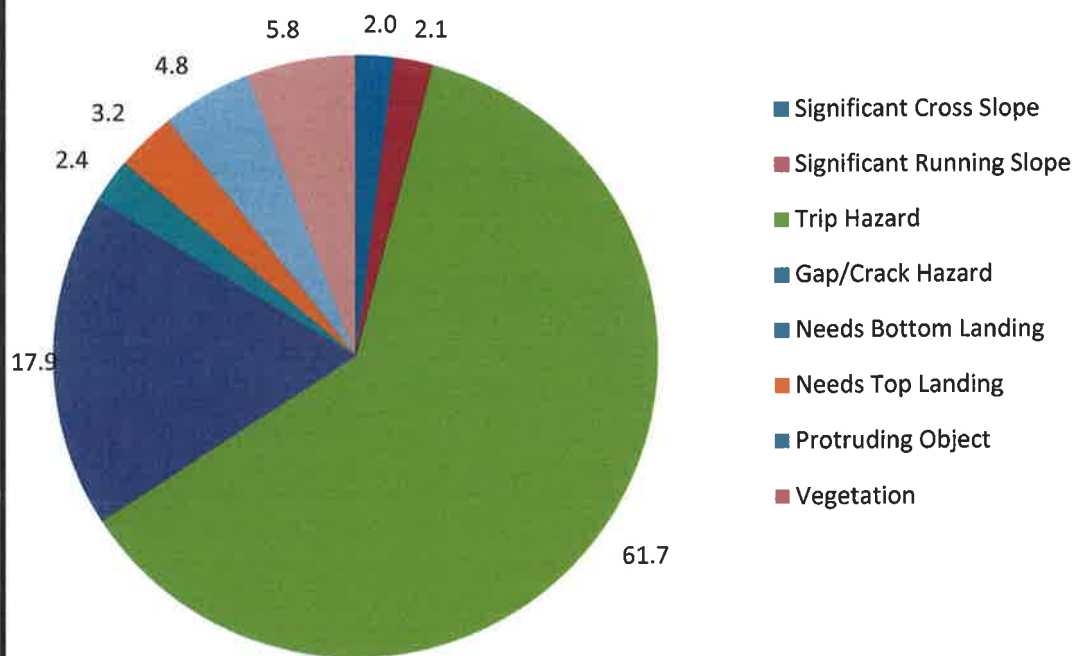
Sidewalk Obstruction by Type

Obstruction Type	Number of Locations	Percent of Locations
Significant Cross Slope	100	2.0
Significant Running Slope	102	2.1
Trip Hazard	3019	61.7
Gap/Crack Hazard	877	17.9
Needs Bottom Landing	116	2.4
Needs Top Landing	156	3.2
Protruding Object	236	4.8
Vegetation	286	5.8
Total	4892	100.0

Obstructions by Number of Locations



Obstructions by Percent



Obstructions Rankings

Significant Cross Slope

Slope Range (%)	Number of Locations	Percent of Locations
2% to 4%	1	1.0
4.1% to 10%	83	83.0
Greater than 10%	16	16.0
Total	100	100.0

Significant Running Slope

Slope Range (%)	Number of Locations	Percent of Locations
5% to 7.9%	36	35.3
8% to 10%	31	30.4
Greater than 10%	35	34.3
Total	102	100.0

Trip Hazard

Tip Height (in)	Number of Locations	Percent of Locations
0.25" to 0.5"	599	19.8
0.6" to 1"	2228	73.8
Greater than 1"	192	6.4
Total	3019	100.0

Gap/Crack Hazard

Gap/Crack Width (in)	Number of Locations	Percent of Locations
0.5" to 1"	406	46.3
1.1" to 2"	169	19.3
Greater than 2"	302	34.4
Total	877	100.0

Assume replace 3 5-foot wide sidewalk pannels per obstruction.

Average repair cost per obstruction = \$800
 Obstructions ranked ***Correction Recommended*** = 3549
 Estimated Cost to Repair Obstructions = \$2,839,200

Proposed *Correction Recommended* Structures on City Properties, Signalized Pedestrian Crossings, and Bus Shelters:

The following summarize the structures that are ranked as *Correction Recommended*.

Bus Shelter Pads Summary:

Location	Boarding Pad Length (in)	Pad Length Rating	Boarding Pad Width (in)	Pad Width Rating	Boarding Pad Running Slope (%)	Pad Slope Rating	Shelter Clear Floor Width (in)	Shelter Width Rating	Shelter Clear Floor Length (in)	Shelter Length Rating	Total Rating
Reactor Park	42	5	208	0	3.4	2	84	0	168	0	7
Rock Quarry Rd & The Pointe	240	0	72	0	0.7	0	18	5	72	0	5
Buttonwood Dr & Gateway	0	5	0	5		0	60	0	156	0	10
Worley St & Lasalle Ln	108	0	48	1	5.2	5	48	0	60	0	6
Paris Rd & Gerbs	144	0	60	0	11.3	5	60	0	60	0	5
Keene St & Women's and Children's Hospital	108	0	144	0	6.5	5	60	0	60	0	5

Summary of Improvements to Bus Shelter Pads Ranked as *Correction Recommended*.

1. The City's bus routes were largely condensed in June of 2019. Bus shelters were removed in locations where the buses no longer had routes.

2. Bus shelter pad improvements summary:

Reactor Park: This location has an MU bus shelter not located on City right of way.

Rock Quarry Rd & The Pointe: This location has been removed from the bus system.

Buttonwood Dr and Gateway: This location has been removed from the bus system.

Worley St & Lasalle Ln: This location is a bench with a boarding pad. The existing boarding pad has a slope of 5.2% perpendicular to the road; thus, the boarding pad was replaced in 2019 to meet the required cross slope.

Paris Road & Gerbes: This location has been removed from the bus system.

Keene St & Women's and Children's Hospital: This location is a shelter with the boarding pad offset from the shelter. The existing boarding pad has a slope of 6.5% perpendicular to the road. The boarding pad and a portion of the sidewalk needs to be replaced in order to meet the required cross slope.

Signalized Pedestrian Crossings Summary:

All of the inventoried signalized pedestrian crossings were ranked as *Compliant* or *Substantially Compliant*. The City has been working to improve the existing signalized pedestrian crossing with audible pedestrian signals (APS) at locations requested by the Disabilities Commissions and the local chapter of the Missouri Federation of the Blind. The improvements cost approximately \$80,000 per intersection.

Locations where APS are planned to be installed include:

1. Rangeline Road and Smiley Lane (Construction in 2021)
2. Worley Street and West Boulevard (Construction in 2022)
3. Worley Street and Bernadette Drive (Construction in 2022)
4. Worley Street and Garth Avenue (Construction date undetermined)
5. Garth Avenue and Business Loop 70 (Construction in 2024 with the major maintenance project)

MoDOT is planning to install APS improvements at Providence Road and Green Meadows Road; Worley Street and Stadium Boulevard; and Mick Deaver Drive and Stadium Boulevard. The City may install APS at these locations if MoDOT is not able to complete the improvements.

City Properties Summary:

The following sheets summarize the work to be completed to improve sidewalks, curb ramps, and driveway accesses within right of way on city properties. The spreadsheets provide a summary for each department and include the work to be completed and cost estimate for the work at each property. The improvements are being completed through the first half of 2022.

ADA Sidewalk Transition Plan - Sidewalk Improvements on City Property
Public Works Department Properties

Location: 9th & Ash Parking Lot

Number on Diagram	Deficiency Type	Repair Type	Removal Dimension	Area or Length (SF or LF)	Item Cost (\$)	Construction Cost (\$)	Notes
1	Crack	Driveway	5'x10'	50	\$15.95	\$797.50	6" Concrete
7	ADA Ramp, 8th & Ash	Ramp/Det. Warning	10'x10'	100	\$36.50	\$3,650.00	6" Concrete

Location: 10th & Cherry Parking Garage

Number on Diagram	Deficiency Type	Repair Type	Removal Dimension	Area or Length (SF or LF)	Item Cost (\$)	Construction Cost (\$)	Notes
1	Trip Hazard	Sidewalk	10'x10'	100	\$16.50	\$1,650.00	4" Concrete
2	Cross Slope	Sidewalk	10'x10'	100	\$16.50	\$1,650.00	4" Concrete
3	Trip Hazard/Cross Slope	Sidewalk	10'x10'	100	\$16.50	\$1,650.00	4" Concrete
4	Slope	Sidewalk/Ramp/Det. Warning	20'x10'	200	\$36.30	\$7,260.00	4" Concrete
5	Crack	Sidewalk	10'x10'	100	\$16.50	\$1,650.00	4" Concrete
6	Detectable Warning	Det. Warning		20	\$34.10	\$682.00	Only needs Det. Warning
7	Crack/Cross slope	Driveway	60'x10'	600	\$15.95	\$9,570.00	6" Concrete

Location: Walnut Parking Lot

Number on Diagram	Deficiency Type	Repair Type	Removal Dimension	Area or Length (SF or LF)	Item Cost (\$)	Construction Cost (\$)	Notes
1	Cross Slope	Driveway	40'x5'	200	\$15.95	\$3,190.00	6" Concrete

Location: 6th & Cherry Parking Garage

Number on Diagram	Deficiency Type	Repair Type	Removal Dimension	Area or Length (SF or LF)	Item Cost (\$)	Construction Cost (\$)	Notes
1	Crack	Curb Ramp	12'x15'	180	\$16.50	\$2,970.00	4" Concrete

Location: Wabash Bus Station

Number on Diagram	Deficiency Type	Repair Type	Removal Dimension	Area or Length (SF or LF)	Item Cost (\$)	Construction Cost (\$)	Notes
1	Crack	Driveway	12'x10'	120	\$15.95	\$1,914.00	6" Concrete
2	Crack	Driveway	20'x10'	200	\$15.95	\$3,190.00	6" Concrete
4	Crack	Sidewalk	4'x8'	32	\$16.50	\$528.00	6" Concrete

	Traffic Control	5	EA	\$869.00	\$4,345.00	
	Seeding and Mulching	0	LS	\$755.30	\$0.00	

*Concrete pricing includes Quick Curing

Bid Total for Public Works/Parking Properties =

\$44,696.50

ADA Sidewalk Transition Plan - Sidewalk Improvements on City Property
Public Works Department Properties

Location: Worley Street Property (Northwest Corner of Worley and Woodlawn)

Number on Diagram	Deficiency Type	Repair Type	Removal Dimension	Area or Length (SF or LF)	Item Cost (\$)	Construction Cost (\$)	Notes
1	Cross Slope	Sidewalk	4'x130'	520	\$16.50	\$8,580.00	4" Concrete
2	Crack/Cross Slope	Ramp/Det. Warning	5'x5'	25	\$36.30	\$907.50	6" Concrete

Location: The Wardrobe

Number on Diagram	Deficiency Type	Repair Type	Removal Dimension	Area or Length (SF or LF)	Item Cost (\$)	Construction Cost (\$)	Notes
2	Landing/Cross Slope	Ramp/Det. Warning	4'x12', 5'x8'	88	\$36.30	\$3,194.40	6" Concrete
3	Crack	Sidewalk	4'x8'	48	\$16.50	\$792.00	4" Concrete

Location: Armory

Number on Diagram	Deficiency Type	Repair Type	Removal Dimension	Area or Length (SF or LF)	Item Cost (\$)	Construction Cost (\$)	Notes
1	Crack	Sidewalk/Ramp/Det. Warning	5'x30', 5'x5'	175	\$36.30	\$6,352.50	6" Concrete
2	Trip Hazard	Sidewalk	6'x6'	36	\$16.50	\$594.00	4" Concrete
3	Slope/Crack	Sidewalk/Ramp/Det. Warning	5'x30', 5'x10'	200	\$36.30	\$7,260.00	6" Concrete
3	Detoriated	Street Patch	5'x5'	25	\$15.95	\$398.75	
4	Crack	Sidewalk	5'x10'	50	\$16.50	\$825.00	4" Concrete
5	Crack	Driveway	20'x10'	200	\$15.95	\$3,190.00	6" Concrete
6	Crack	Sidewalk/Ramp	5'x30', 5'x10'	200	\$36.30	\$7,260.00	6" Concrete
7	Crack	Sidewalk	5'x5'	25	\$16.50	\$412.50	4" Concrete
8	Crack	Sidewalk	9'x9'	81	\$16.50	\$1,336.50	4" Concrete
9	Crack	Sidewalk	9'x9'	81	\$16.50	\$1,336.50	4" Concrete

	Traffic Control	3	EA	\$869.00	\$2,607.00	
	Seeding and Mulching	1	LS	\$755.30	\$755.30	

*Concrete pricing includes Quick Curing

Bid Total for Public Works/CIP Properties =

\$45,801.95

ADA Sidewalk Transition Plan - Sidewalk Improvements on City Property
City Utilities Department Properties

Location: Water Storage Tank at Ash & Bernadette

Number on Diagram	Deficiency Type	Repair Type	Removal Dimension	Area or Length (SF or LF)	Item Cost (\$)	Construction Cost (\$)	Notes
1	Trip Hazard	Sidewalk	4'x14'	56	\$16.50	\$924.00	4" Concrete
2	Trip Hazard	Sidewalk	5'x5'	25	\$16.50	\$412.50	4" Concrete
3	Trip Hazard/Crack	Sidewalk	5'x25'	125	\$16.50	\$2,062.50	4" Concrete

Location: W&L Storage Yard

Number on Diagram	Deficiency Type	Repair Type	Removal Dimension	Area or Length (SF or LF)	Item Cost (\$)	Construction Cost (\$)	Notes
1	Rail Crossing	Det. Warning		20	\$34.10	\$682.00	Need Det. Warning

Location: Stormwater Management Properties on Crystal Rock Ct

Number on Diagram	Deficiency Type	Repair Type	Removal Dimension	Area or Length (SF or LF)	Item Cost (\$)	Construction Cost (\$)	Notes
1	Crack	Sidewalk	4'x4'	16	\$16.50	\$264.00	4" Concrete
		Traffic Control	2	EA	\$869.00	\$1,738.00	Crystal Rock Ct. will not need
		Seeding and Mulching	1	LS		\$184.26	Used same SF as sidewalk

*Concrete pricing includes Quick Curing

Bid Total for Utilities Properties = \$6,267.26

ADA Sidewalk Transition Plan - Sidewalk Improvements on City Property
Fire Department Properties

Location: Fire Station 1 & Administration Building

Number on Diagram	Deficiency Type	Repair Type	Removal Dimension	Area or Length (SF or LF)	Item Cost (\$)	Construction Cost (\$)	Notes
1	Crack/Cross Slope	Sidewalk	5'x45'	225	\$16.50	\$3,712.50	4" Concrete
1	Remove app	Curb&gutter	30'	30	\$37.13	\$1,113.90	
2	Crack/Landing	Ramp/Det. Warning	5'x25'	125	\$36.30	\$4,537.50	6" Concrete
3	Crack	Driveway	5'x10'	50	\$15.95	\$797.50	6" Concrete

Location: Fire Station 2

Number on Diagram	Deficiency Type	Repair Type	Removal Dimension	Area or Length (SF or LF)	Item Cost (\$)	Construction Cost (\$)	Notes
1	Trip Hazard	Sidewalk	4'x8'	32	\$16.50	\$528.00	4" Concrete
2	Landing	Ramp/Det. Warning	4'x24', 4'x8'	128	\$36.30	\$4,646.40	6" Concrete
2	replace	curb & gutter	30'	30	\$37.13	\$1,113.90	6" Concrete
3	Trip Hazard	Sidewalk	4'x8'	32	\$17.50	\$560.00	6" Concrete

Location: Fire Station 4

Number on Diagram	Deficiency Type	Repair Type	Removal Dimension	Area or Length (SF or LF)	Item Cost (\$)	Construction Cost (\$)	Notes
2	Crack	Sidewalk	4'x5'	20	\$16.50	\$330.00	4" Concrete
3	Crack	Sidewalk	4'x5'	20	\$16.50	\$330.00	4" Concrete
4	Crack	Sidewalk	4'x8'	32	\$16.50	\$528.00	4" Concrete

Location: Fire Station 6

Number on Diagram	Deficiency Type	Repair Type	Removal Dimension	Area or Length (SF or LF)	Item Cost (\$)	Construction Cost (\$)	Notes
1	Crack	Sidewalk	5'x15'	75	\$16.50	\$1,237.50	4" Concrete
2	Landing	Ramp/Det. Warning	5'x30', 5'x10'	200	\$36.30	\$7,260.00	6" Concrete
	Crack	Sidewalk	5'x8'	40	\$16.50	\$660.00	4" Concrete

ADA Sidewalk Transition Plan - Sidewalk Improvements on City Property
Fire Department Properties

Location: Fire Station 8

Number on Diagram	Deficiency Type	Repair Type	Removal Dimension	Area or Length (SF or LF)	Item Cost (\$)	Construction Cost (\$)	Notes
1	Cross Slope/Running Slope	Sidewalk	5'x8'	40	\$16.50	\$660.00	4" Concrete
2	Trip Hazard	Sidewalk	5'x15'	75	\$16.50	\$1,237.50	4" Concrete
3	Running Slope	Ramp/Det. Warning	5'x10'	50	\$36.40	\$1,820.00	6" Concrete
3	Running Slope	Sidewalk to ramp	5'x10', 5'x8'	90	\$16.50	\$1,485.00	4" Concrete

Location: Fire Station 9

Number on Diagram	Deficiency Type	Repair Type	Removal Dimension	Area or Length (SF or LF)	Item Cost (\$)	Construction Cost (\$)	Notes
1	Running Slope	Ramp	5'x15'	75	\$17.60	\$1,320.00	6" Concrete

	Traffic Control	6	EA	\$869.00	\$5,214.00	
	Seeding and Mulching	1	LS		\$779.37	

*Concrete pricing includes Quick Curing

Bid Total for Fire Properties = \$39,871.07

ADA Sidewalk Transition Plan - Sidewalk Improvements on City Property
Health Department Property

Location: Health Department

Number on Diagram	Deficiency Type	Repair Type	Removal Dimension	Area or Length (SF or LF)	Item Cost (\$)	Construction Cost (\$)	Notes
1	Trip Hazard/Cross Slope	Sidewalk	6'x30'	180	\$16.50	\$2,970.00	4" Concrete
2	Cross Slope	Driveway	22'x32'	704	\$15.95	\$11,228.80	6" Concrete
3	Cross Slope	Sidewalk	6'x28'	168	\$36.40	\$6,115.20	6" Concrete
5	Cross Slope	Driveway	14'x40'	560	\$15.95	\$8,932.00	6" Concrete
2	Driveway 2	Adjust MH to grade	1	1	\$55.00	\$55.00	Match existing
2	Driveway 2	Curb & gutter	30'	33	\$37.13	\$1,225.29	Match existing

	Traffic Control	1	EA	\$869.00	\$869.00	
	Seeding and Mulching	1	LS		\$288.84	

*Concrete price includes quick curing

Bid Total for Health Property =

\$31,684.13

ADA Sidewalk Transition Plan - Sidewalk Improvements on City Property
Parks and Recreation Department Properties

Sidewalk Removal (\$/SF) = 4.00
 4" Sidewalk Construction (\$/SF) = 10.00
 6" Driveway Construction (\$/SF) = 12.00
 6" Curb Ramp Construction (\$/SF) = 12.00
 Detectable Warning Installation (\$/SF) = 33.00
 Curb & Gutter Removal (\$/LF) = 6.00
 Curb & Gutter Construction (\$/LF) = 33.00
 Seeding & Mulching (\$/SY) = 2.00

Estimated Total Improvement Costs = \$153,994.00

Estimated Total Improvement Costs w/10% Contengency = \$169,393.40

Location: Field Park

Number on Diagram	Deficiency Type	Repair Type	Removal Dimension	Area or Length (SF or LF)	Removal Cost (\$)	Installation Cost (\$)	Construction Cost (\$)	Notes
1	Cross Slope	Sidewalk	5'x28'	140	\$560.00	\$1,400.00	\$1,960.00	Remove drive approach & add curb
		Curb & Gutter		28	\$168.00	\$924.00	\$1,092.00	
2	Cross Slope	Ramp	13'x5.5'	71.5	\$286.00	\$858.00	\$1,144.00	6" Concrete
		Det. Warning		10		\$330.00	\$330.00	
3	Cross Slope	Driveway	6.5'x38'	247	\$988.00	\$2,964.00	\$3,952.00	6" Concrete
4	Cross Slope	Sidewalk	4'x26'	104	\$416.00	\$1,040.00	\$1,456.00	Remove drive approach & add curb
		Curb & Gutter		26	\$156.00	\$858.00	\$1,014.00	
5	Cross Slope	Ramp	5'x12'	60	\$240.00	\$720.00	\$960.00	6" Concrete
		Det. Warning		10		\$330.00	\$330.00	
	Seeding & Mulching			18		\$36.00	\$36.00	

Project Total = \$12,274.00

ADA Sidewalk Transition Plan - Sidewalk Improvements on City Property
Parks and Recreation Department Properties

Location: Oakland Park

Number on Diagram	Deficiency Type	Repair Type	Removal Dimension	Area or Length (SF or LF)	Removal Cost (\$)	Installation Cost (\$)	Construction Cost (\$)	Notes
1	Dried Concrete	Sidewalk	4'x10'	40	\$160.00	\$400.00	\$560.00	6" Concrete
2	Cross Slope	Sidewalk	4'x8'	32	\$128.00	\$320.00	\$448.00	
3	Slope/Crack/Landing	Sidewalk/Ramp	4'x28', 4'x4'	128	\$512.00	\$1,536.00	\$2,048.00	
		Det. Warning		8		\$264.00	\$264.00	
4	Running Slope/Crack	Sidewalk/Ramp	4'x20'	80	\$320.00	\$960.00	\$1,280.00	6" Concrete
5	Cross Slope	Driveway	25'x30'	750	\$3,000.00	\$9,000.00	\$12,000.00	6" Concrete
6	Cross Slope	Sidewalk/Ramp	4'x8'	32	\$128.00	\$384.00	\$512.00	6" Concrete
7	Cross Slope	Sidewalk/Ramp	4'x12'	48	\$192.00	\$576.00	\$768.00	6" Concrete
8	Cross Slope	Driveway	25'x30'	750	\$3,000.00	\$9,000.00	\$12,000.00	6" Concrete
9	Cross Slope	Sidewalk/Ramp	4'x12'	48	\$192.00	\$576.00	\$768.00	6" Concrete
10	Needs Landing/Slope	Sidewalk/Ramp	5'x5', 5'x5'	50	\$200.00	\$600.00	\$800.00	6" Concrete
		Det. Warning		10		\$330.00	\$330.00	
11	Trip Hazard	Sidewalk	5'x10'	50	\$200.00	\$500.00	\$700.00	
	Seeding & Mulching			355		\$710.00	\$710.00	

Project Total = \$33,188.00

Location: Lions-Stephens Park

Number on Diagram	Deficiency Type	Repair Type	Removal Dimension	Area or Length (SF or LF)	Removal Cost (\$)	Installation Cost (\$)	Construction Cost (\$)	Notes
1	Trip Hazard	Sidewalk	6'x12'	72	\$288.00	\$720.00	\$1,008.00	6" Concrete
2	Trip Hazard	Sidewalk	6'x12'	72	\$288.00	\$864.00	\$1,152.00	
3	Cross Slope/Landing	Ramp/Landing	6'x24', 6'x6'	180	\$720.00	\$2,160.00	\$2,880.00	
		Det. Warning		12		\$396.00	\$396.00	
4	Crack/Cross Slope	Sidewalk	4'x32'	128	\$512.00	\$1,280.00	\$1,792.00	
	Seeding & Mulching			170		\$340.00	\$340.00	

Project Total = \$7,568.00

ADA Sidewalk Transition Plan - Sidewalk Improvements on City Property
Parks and Recreation Department Properties

Location: Parks & Rec Property at Port Way and Canaveral Drive

Number on Diagram	Deficiency Type	Repair Type	Removal Dimension	Area or Length (SF or LF)	Removal Cost (\$)	Installation Cost (\$)	Construction Cost (\$)	Notes
1	Trip Hazard	Sidewalk	5'x10'	50	\$200.00	\$500.00	\$700.00	6" Concrete
2	Slope/Landing	Ramp	5'x15', 5'x5'	100	\$400.00	\$1,200.00	\$1,600.00	
		Det. Warning		10		\$330.00	\$330.00	6" Concrete
3	Slope/Landing	Ramp	5'x15', 5'x5'	100	\$400.00	\$1,200.00	\$1,600.00	
		Det. Warning		10		\$330.00	\$330.00	
4	Slope/Trip Hazard	Sidewalk	5'x10'	50	\$200.00	\$500.00	\$700.00	
	Seeding & Mulching			100		\$200.00	\$200.00	

Project Total = \$5,460.00

Location: Eastport Park

Number on Diagram	Deficiency Type	Repair Type	Removal Dimension	Area or Length (SF or LF)	Removal Cost (\$)	Installation Cost (\$)	Construction Cost (\$)	Notes
1	Trip Hazard	Sidewalk	5'x5'	25	\$100.00	\$250.00	\$350.00	
2	Trip Hazard	Sidewalk	5'x5'	25	\$100.00	\$250.00	\$350.00	
3	Trip Hazard	Sidewalk	5'x15'	75	\$300.00	\$750.00	\$1,050.00	
	Seeding & Mulching			20		\$40.00	\$40.00	

Project Total = \$1,790.00

Location: Bonnie View Nature Sanctuary

Number on Diagram	Deficiency Type	Repair Type	Removal Dimension	Area or Length (SF or LF)	Removal Cost (\$)	Installation Cost (\$)	Construction Cost (\$)	Notes
1	Landing/Running Slope	Sidewalk	5'x25'	125	\$500.00	\$1,250.00	\$1,750.00	
2	Landing	Sidewalk	5'x15'	75	\$300.00	\$750.00	\$1,050.00	
3	Trip Hazard	Sidewalk	5'x10'	50	\$200.00	\$500.00	\$700.00	
4	Trip Hazard	Sidewalk	5'x10'	50	\$200.00	\$500.00	\$700.00	
	Seeding & Mulching			120		\$240.00	\$240.00	

Project Total = \$4,440.00

ADA Sidewalk Transition Plan - Sidewalk Improvements on City Property
Parks and Recreation Department Properties

Location: Bethel Park

Number on Diagram	Deficiency Type	Repair Type	Removal Dimension	Area or Length (SF or LF)	Removal Cost (\$)	Installation Cost (\$)	Construction Cost (\$)	Notes
1	Running Slope	Sidewalk	5'x10'	50	\$200.00	\$500.00	\$700.00	6" Concrete
2	Cross Slope	Driveway	20'x75'	1500	\$6,000.00	\$18,000.00	\$24,000.00	
3	Trip Hazard	Sidewalk	5'x15'	75	\$300.00	\$750.00	\$1,050.00	
4	Trip Hazard	Sidewalk	5'x20'	100	\$400.00	\$1,000.00	\$1,400.00	
5	Running Slope	Sidewalk	5'x20'	100	\$400.00	\$1,000.00	\$1,400.00	
6	Crack	Sidewalk	5'x5'	25	\$100.00	\$250.00	\$350.00	6" Concrete
7	Crack	Sidewalk	5'x5'	25	\$100.00	\$250.00	\$350.00	
8	Slope/Landing	Ramp	5'x15', 5'x5'	100	\$400.00	\$1,200.00	\$1,600.00	
		Det. Warning		10		\$330.00	\$330.00	
Seeding & Mulching				350		\$700.00	\$700.00	

Project Total = \$31,880.00

Location: Phillips Park

Number on Diagram	Deficiency Type	Repair Type	Removal Dimension	Area or Length (SF or LF)	Removal Cost (\$)	Installation Cost (\$)	Construction Cost (\$)	Notes
1	Crack	Sidewalk	5'x25'	125	\$500.00	\$1,250.00	\$1,750.00	6" Concrete
2	Running Slope	Sidewalk	5'x20'	100	\$400.00	\$1,000.00	\$1,400.00	
3	Slope/Landing	Ramp	5'x15', 5'x10'	125	\$500.00	\$1,500.00	\$2,000.00	
		Det. Warning		10		\$330.00	\$330.00	
Seeding & Mulching				120		\$240.00	\$240.00	

Project Total = \$5,720.00

Location: Kiwanis Park

Number on Diagram	Deficiency Type	Repair Type	Removal Dimension	Area or Length (SF or LF)	Removal Cost (\$)	Installation Cost (\$)	Construction Cost (\$)	Notes
1	Trip Hazard	Sidewalk	4'x15'	60	\$240.00	\$600.00	\$840.00	
2	Trip Hazard	Sidewalk	4'x10'	40	\$160.00	\$400.00	\$560.00	
3	Trip Hazard	Sidewalk	4'x10'	40	\$160.00	\$400.00	\$560.00	
Seeding & Mulching				70		\$140.00	\$140.00	

Project Total = \$2,100.00

ADA Sidewalk Transition Plan - Sidewalk Improvements on City Property
Parks and Recreation Department Properties

Location: Fairview Park

Number on Diagram	Deficiency Type	Repair Type	Removal Dimension	Area or Length (SF or LF)	Removal Cost (\$)	Installation Cost (\$)	Construction Cost (\$)	Notes
1	Crack	Sidewalk	4'x16'	64	\$256.00	\$640.00	\$896.00	
2	Crack	Sidewalk	4'x16'	64	\$256.00	\$640.00	\$896.00	
3	Cross Slope	Sidewalk	4'x8'	32	\$128.00	\$320.00	\$448.00	
	Seeding & Mulching			80		\$160.00	\$160.00	

Project Total = \$2,400.00

Location: Barberry Park

Number on Diagram	Deficiency Type	Repair Type	Removal Dimension	Area or Length (SF or LF)	Removal Cost (\$)	Installation Cost (\$)	Construction Cost (\$)	Notes
1	Crack (Missing Section)	Sidewalk	5'x5'	25	\$100.00	\$250.00	\$350.00	
2	Slope/Landing	Ramp	2'x35'	105	\$420.00	\$1,260.00	\$1,680.00	6" Concrete
		Det. Warning		70		\$2,310.00	\$2,310.00	
	Seeding & Mulching			20		\$40.00	\$40.00	

Project Total = \$4,380.00

Location: Smiley Lane Park

Number on Diagram	Deficiency Type	Repair Type	Removal Dimension	Area or Length (SF or LF)	Removal Cost (\$)	Installation Cost (\$)	Construction Cost (\$)	Notes
1	Slope/Landing	Ramp	5'x10', 5'x10'	100	\$400.00	\$1,200.00	\$1,600.00	6" Concrete
		Det. Warning		20		\$660.00	\$660.00	
2	Slope/Landing	Ramp	5'x10', 5'x10'	100	\$400.00	\$1,200.00	\$1,600.00	6" Concrete
		Det. Warning		20		\$660.00	\$660.00	
3	Crack	Sidewalk	5'x5'	25	\$100.00	\$250.00	\$350.00	
	Seeding & Mulching			20		\$40.00	\$40.00	

Project Total = \$4,910.00

Location: Indian Hills Park

Number on Diagram	Deficiency Type	Repair Type	Removal Dimension	Area or Length (SF or LF)	Removal Cost (\$)	Installation Cost (\$)	Construction Cost (\$)	Notes
1	Crack	Sidewalk	5'x6'	30	\$120.00	\$300.00	\$420.00	
2	Slope/Landing	Ramp	5'x5', 5'x15'	100	\$400.00	\$1,200.00	\$1,600.00	6" Concrete
		Det. Warning		20		\$660.00	\$660.00	
	Seeding & Mulching			40		\$80.00	\$80.00	

**ADA Sidewalk Transition Plan - Sidewalk Improvements on City Property
Parks and Recreation Department Properties**

Project Total = \$2,760.00

Location: Woodridge Park

Number on Diagram	Deficiency Type	Repair Type	Removal Dimension	Area or Length (SF or LF)	Removal Cost (\$)	Installation Cost (\$)	Construction Cost (\$)	Notes
1	Slope/Landing	Ramp	5'x15', 5'x15'	150	\$600.00	\$1,800.00	\$2,400.00	6" Concrete
		Det. Warning		10		\$330.00	\$330.00	
	Seeding & Mulching			40		\$80.00	\$80.00	

Project Total = \$2,810.00

Location: Bear Creek Trail Access

Number on Diagram	Deficiency Type	Repair Type	Removal Dimension	Area or Length (SF or LF)	Removal Cost (\$)	Installation Cost (\$)	Construction Cost (\$)	Notes
1	Slope/Landing	Ramp	5'x15', 5'x15'	150	\$600.00	\$1,800.00	\$2,400.00	6" Concrete
		Det. Warning		10		\$330.00	\$330.00	
	Seeding & Mulching			40		\$80.00	\$80.00	

Project Total = \$2,810.00

Location: Valley View Park

Number on Diagram	Deficiency Type	Repair Type	Removal Dimension	Area or Length (SF or LF)	Removal Cost (\$)	Installation Cost (\$)	Construction Cost (\$)	Notes
1	Running Slope	Sidewalk	5'x16'	80	\$320.00	\$800.00	\$1,120.00	
2	Crack	Sidewalk	5'x8'	4	\$16.00	\$40.00	\$56.00	
	Seeding & Mulching			50		\$100.00	\$100.00	

Project Total = \$1,276.00

Location: Parks and Rec Property at Blue Ridge & Piranha

Number on Diagram	Deficiency Type	Repair Type	Removal Dimension	Area or Length (SF or LF)	Removal Cost (\$)	Installation Cost (\$)	Construction Cost (\$)	Notes
1	Crack	Ramp	5'x5', 5'x25'	150	\$600.00	\$1,800.00	\$2,400.00	6" Concrete
		Det. Warning		10		\$330.00	\$330.00	
	Seeding & Mulching			60		\$120.00	\$120.00	

Project Total = \$2,850.00

ADA Sidewalk Transition Plan - Sidewalk Improvements on City Property
Parks and Recreation Department Properties

Location: Grindstone Nature Area

Number on Diagram	Deficiency Type	Repair Type	Removal Dimension	Area or Length (SF or LF)	Removal Cost (\$)	Installation Cost (\$)	Construction Cost (\$)	Notes
1	Trip Hazard	Sidewalk	5'x10'	50	\$200.00	\$500.00	\$700.00	
2	Trip Hazard	Sidewalk	8'x16'	128	\$512.00	\$1,280.00	\$1,792.00	
	Seeding & Mulching			20		\$40.00	\$40.00	

Project Total = \$2,532.00

Location: Clary-Shy Park

Number on Diagram	Deficiency Type	Repair Type	Removal Dimension	Area or Length (SF or LF)	Removal Cost (\$)	Installation Cost (\$)	Construction Cost (\$)	Notes
1	Landing	Ramp	5'x5', 5'x10'	75	\$300.00	\$900.00	\$1,200.00	6" Concrete
		Det. Warning		10		\$330.00	\$330.00	
2	Crack	Sidewalk	5'x30'	150	\$600.00	\$1,500.00	\$2,100.00	
3	Trip Hazard	Sidewalk	5'x5'	25	\$100.00	\$250.00	\$350.00	
4	Crack	Sidewalk	5'x5'	25	\$100.00	\$250.00	\$350.00	
5	Crack	Sidewalk	5'x10'	50	\$200.00	\$500.00	\$700.00	
6	Crack	Sidewalk	5'x18'	90	\$360.00	\$900.00	\$1,260.00	
	Seeding & Mulching			150		\$300.00	\$300.00	

Project Total = \$6,590.00

Location: Stephens Lake Park

Number on Diagram	Deficiency Type	Repair Type	Removal Dimension	Area or Length (SF or LF)	Removal Cost (\$)	Installation Cost (\$)	Construction Cost (\$)	Notes
1	Curb ramp	Ramp	5'x10'	50	\$200.00	\$600.00	\$800.00	6" Concrete
		Det. Warning		10		\$330.00	\$330.00	
2	Crack	Sidewalk	5'x15'	75	\$300.00	\$750.00	\$1,050.00	6" Concrete
3	Landing	Ramp	5'x5', 5'x15'	100	\$400.00	\$1,200.00	\$1,600.00	
		Det. Warning		10		\$330.00	\$330.00	
	Seeding & Mulching			70		\$140.00	\$140.00	

Project Total = \$4,250.00

**ADA Sidewalk Transition Plan - Sidewalk Improvements on City Property
Parks and Recreation Department Properties**

Location: Cosmo Park

Number on Diagram	Deficiency Type	Repair Type	Removal Dimension	Area or Length (SF or LF)	Removal Cost (\$)	Installation Cost (\$)	Construction Cost (\$)	Notes
1	Crack	Sidewalk	4'x12'	48	\$192.00	\$480.00	\$672.00	6" Concrete
2	Trip Hazard	Sidewalk	4'x12'	48	\$192.00	\$480.00	\$672.00	
3	Trip Hazard	Sidewalk	4'x4'	16	\$64.00	\$160.00	\$224.00	
4	Crack	Sidewalk	4'x4'	16	\$64.00	\$160.00	\$224.00	
5	Crack	Sidewalk	4'x4'	16	\$64.00	\$160.00	\$224.00	
6	Cross Slope	Driveway	35'x15'	525	\$2,100.00	\$6,300.00	\$8,400.00	
Seeding & Mulching				75		\$150.00	\$150.00	

Project Total = \$10,566.00

Location: Garth Nature Area

Number on Diagram	Deficiency Type	Repair Type	Removal Dimension	Area or Length (SF or LF)	Removal Cost (\$)	Installation Cost (\$)	Construction Cost (\$)	Notes
1	Trip Hazard	Sidewalk	10'x10'	100	\$400.00	\$1,000.00	\$1,400.00	
Seeding & Mulching				20		\$40.00	\$40.00	

Project Total = \$1,440.00 Repair Completed

Proposed CIP Projects that include Pedestrian Facility Improvements:

The following list summarizes the upcoming improvement projects that will include improvements to the pedestrian facilities. Pedestrian facility improvements include installation or upgrade of sidewalks, curb ramps, and intersections to meet ADA standards.

Construction Year 2022

Street Projects

Walnut Major Maintenance – College to Old 63: This project includes dig out repairs and an asphalt overlay of Walnut Street between College Avenue and Old Highway 63. The project will also include sidewalk and curb ramp repairs at various locations along both sides of Walnut Street.

Intersection Projects

APS Signal Upgrades: Worley at West Broadway and Worley at Bernadette: This project includes the modification of the intersection pedestrian signals to include the audible feature at two locations along Worley Street. The improvements will also include replacing curb ramps that do not meet ADA criteria.

4th Street and Broadway Pedestrian Crossing: This project includes the construction of curb ramps, cross walks, pedestrian islands, and flashing beacons at the intersection of 4th Street and Broadway.

Sidewalk Projects

North Stadium Sidewalk – I-70 to Primrose: This project includes the construction of 5-foot wide sidewalk along the west side of Stadium Boulevard between the Interstate 70 overpass and Primrose Drive, a pedestrian crossing across Stadium Boulevard to connect to the Cosmo Park trail, and a sidewalk and pedestrian crossing along Business Loop to connect Cosmo Park to the Interstate 70 overpass. In addition, the project will fill in two sidewalk gaps; one on Rose Drive and one on Aaron Drive.

Oakland Gravel Road – Vandiver to Grizzly: This project includes the construction of 5-foot wide sidewalk along the west side of Oakland Gravel Road between the Vandiver Drive and Grizzly Court. The project also includes a signalized pedestrian crossing across Oakland Gravel Road at the intersection with Vandiver Drive.

Maguire Sidewalk: This project includes the stabilization of the rock face and the reconstruction of 5-foot wide sidewalk along both sides of Maguire Boulevard between the two bridges.

Construction Year 2023

Street Projects

Ash Street Improvements – Providence to Clinkscapes: This project includes non-motorized improvements, intersection improvements, or a combination of the two along Ash Street between Providence Road and Clinkscapes Road.

Sidewalk Projects

Scott and Westbury Sidewalk: This project includes the construction of 6-foot wide sidewalk along the northwest side of Scott Boulevard/Broadway between Christian Fellowship Road and Silvey Street to replace the asphalt shoulder.

Proposed Curb Ramp Improvements Associated with Asphalt Overlay Projects:

The following list summarizes the curb ramps that need to be modified to meet ADA compliance associated with the asphalt overlay projects.

Curb Ramps to be Improved:

Street Name	From	To	# of Ramps
Locust Street	7th Street	9th Street	9
Richmond Avenue	Rollins Road	Kentucky Boulevard	4
Anthony Street	Williams Street	College Avenue	4
9th Street	Walnut Street	Broadway	4
8th Street	North Boulevard	Ash Street	24
Southpark Drive	College Avenue	Ashland Road	1
Redcastle Court	Strathmore Drive	South End	2
Hubbell Drive	Ash Street	Walnut Street	3
Laurel Drive	Summit Road	Fairview Road	2
Summit Drive	Fairview Road	Walther Court	2
Sable Court	Ivanhoe Boulevard	South End	2
Worley Street	Providence Road	Stadium Boulevard	36
Ivanhoe Blvd	Worley Street	West End	6
4th Street	Stewart Road	Conley Road	2
Forum Boulevard	Stadium Boulevard	Chapel Hill Road	4
Burrwood Drive	Oakhaven Drive	North End	2
Gillespie Bridge	Scott Boulevard	Chapel Hill Road	1
Country Club Drive	Alfred Street	Old 63 Highway	1
Audubon Drive	Stadium Boulevard	Shepard Boulevard	12
Blue Ridge Road	Roundabout	Piranha Court	4
Towne Drive	Clark Lane	Whitegate Drive	2
Whitegate Drive	Paris Road	Sylvan Lane	3
Blue Ridge Road	Brown Station Road	Intersection	2
Forum Boulevard	Stadium Boulevard	Katy Lane (Bridge)	9
Columbia Gorge Parkway	Rolling Hills Road	Bates Creek Drive	2
Limerick Lane	South Deerborn Circle	South End	10
Sandman Lane	Nifong Boulevard	South End	4
Cooper Drive	Buttonwood Drive	Sandman Lane	2
Ammonette Street	Paris Road	Old Highway 63	4
State Farm Parkway	Nifong Boulevard	Roundabout	4
Southampton Drive	Driveway	Roundabout	2
Lynnwood Drive	Green Meadows Road	North End	5
Louisville Drive	Chapel Hill Road	Georgetown Drive	12

Diego Court	Santiago Drive	East End	2
Westridge Drive	West Broadway	Rollins Road	1
Pecan Street	Providence Road	Washington Avenue	2
Dysart Street	Providence Road	Washington Avenue	2
Mikel Street	Sexton Road	Orange Street	2
Forum Katy Parkway	Forum Boulevard	East End	2
Rollins Street	College Avenue	Williams Street	8
Topsail Drive	Parker Street	Grand Banks Drive	4
Christian Fellowship Road	Scott Boulevard	Dayspring Drive	7
Aaron Drive	Stadium Boulevard	Timber Creek Drive	2
Timber Creek Drive	Aaron Drive	Route E	1
Corporate Place	Vandiver Drive	North End	2
Westridge Drive	West Broadway	Rollins Road	1
Ash Street	Providence Road	Heather Lane	36
Rogers Street	Rangeline Street	Providence Road	10
Regal Way	Thornbrooke Parkway	East End	2
Beacan Falls Drive	Thornbrooke Parkway	East End	2
Walnut Street	Providence Road	College Avenue	18
Carolina Drive	Tidewater Drive	Hatteras Drive	8
Tidewater Drive	Carolina Drive	Derby Ridge Drive	12
Brown School Road	Providence Road	Stark Avenue	15
Total Number of Ramps Replaced =			325

Overlay projects with sidewalk from summer 2021

Street Name	From	To	# of Ramps
Buxton Lane	Carolina Drive	Tide Water Drive	4
Chesapeake Lane	Carolina Drive	Tide Water Drive	4
Carolina Drive	Tide Water Drive	Hatteras Drive	2
Tide Water Drive	Carolina Drive	Derby Ridge Drive	3
Hatteras Drive	Derby Ridge Drive	Tide Water Drive	4
Piedmont Place	Carolina Drive	North End	2
Sanderling Drive	Hatteras Drive	Tide Water Drive	4
Louisville Drive	Chapel Hill Road	500' north of Tip Tree Ct	2
Dayspring Drive	North End	South End	3
Christian Fellowship Road	Scott Boulevard	Dayspring Drive	3
Bright Star Drive	Broadway	South End	5
Mount Carmel Lane	Bright Star Drive	Scott Boulevard	4
Jordon Court	Bright Star Drive	West End	2
Cornerstone Court	Christian Fellowship	North End	2
Port Way	Canaveral Drive	South End	4

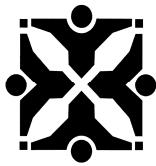
Canaveral Drive	Port Way	Burnside Drive	2
Bull Run Roundabout	Roundabout	Roundabout	8
Longfords Mill Drive	Red Bay Creek Road	Red Bay Creek Road	2
Barksdale Mill Drive	Route KK	Longfords Mill Drive	4
Red Bay Creek Road	Longfords Mill Drive	Longfords Mill Drive	2
Ivanhoe Boulevard	Worley Street	West End	4
Savoy Drive	Ivanhoe Boulevard	Prague Lane	2
Prague Lane	Savoy Lane	Worley Street	2
Beacon Falls Drive	Thornbrooke Parkway	Old Cul-de-sac	2
Regal Way	Thornbrooke Parkway	Newer concrete	2
Heatherstone Court	Regal Way	East End	2
6th Street	Broadway	Elm Street	5
William Street	Paris Road	Broadway	9
Walnut Street	Providence Road	College Avenue	16
Rollins Street	College Avenue	East End	5
Ash Street	Providence Road	10th Street	19
Again Street	West Boulevard	Pershing Road	3
West Boulevard	Stadium Boulevard	Business Loop 70	14
Rain Forest Parkway	Rangeline Street	Concrete Section	0?
Vandiver Drive	Providence Road	Route B	1
Parker Street	Vandiver Drive	North End	4
Blue Ridge Road (mid)	Concrete Section	Rangeline Street	0?
Blue Ridge Road	Garth Roundabout	Asphalt Section	8
Thornberry Drive	Oakland Gravel Road	Culpepper Drive	10
Vawter School Road	Scott Boulevard	New roundabout	2
Total Number of Ramps Replaced =			176

Proposed Bus Shelter Installation Projects:

The following list summarizes the upcoming bus shelter projects. The bus shelter installations include the construction of the shelter pad and in some cases adjoining sidewalk to meet ADA standards.

Year 2022:

At the time this revision was drafted, the new bus shelter locations had not been determined for 2022.

**CITY OF COLUMBIA, MISSOURI****Title II of the Americans with Disabilities Act
Section 504 of the Rehabilitation Act of 1973
Discrimination Complaint Form**

Instructions: Please fill out this form completely, in black ink or type. Sign and return to the address on page 3.

Complainant: _____

Address: _____

City, State and Zip Code: _____

Telephone: Home: _____ Business/Other: _____

Person Discriminated Against: _____
(if other than the complainant)

Address: _____

City, State, and Zip Code: _____

Telephone: Home: _____ Business/Other: _____

Government, or organization, or institution which you believe has discriminated:

Name: _____

Address: _____

County: _____

City: _____

State and Zip Code: _____

Telephone Number: _____

Discrimination Complaint Form

When did the discrimination occur? Date: _____

Describe the acts of discrimination providing the name(s) where possible of the individuals who discriminated (use space on page 3 if necessary):

Have efforts been made to resolve this complaint through the internal grievance procedure of the government, organization, or institution?

Yes_____ No_____

If yes: what is the status of the grievance?

Has the complaint been filed with another bureau of the Department of Justice or any other Federal, State, or local civil rights agency or court?

Yes_____ No_____

If yes:

Agency or Court: _____

Contact Person: _____

Address: _____

City, State, and Zip Code: _____

Telephone Number: _____

Date Filed: _____

Discrimination Complaint Form

Do you intend to file with another agency or court?

Yes_____ No_____

Agency or Court: _____

Address: _____

City, State and Zip Code: _____

Telephone Number: _____

Additional space for answers:

Signature: _____

Date: _____

Return to:

City of Columbia
Law Department
ADA Coordinator
701 E. Broadway, 2nd Flr.
P.O. Box 6015
Columbia, MO 65205