ADA-PROWAG District 1 Training

2019

Presenters:

Carlos Feliciano
Amruta Mate
Fawad Aqueel
Ahmad Nafakh
Radoslaw Rostkowski

Illinois Department of Transportation

IDOT ADA/PROWAG District Training

Agenda

Date: December 5th and 6th

Location: IDOT – Schaumburg Office Classroom Auditorium

201 W. Center Court, Schaumburg, IL 60196

Instructors: A. Mate / C. Feliciano/ F. Aqueel/ R. Rostkowski/ A. Nafakh

MORNING SESSION: 9:00 – 11:45 AM		
	Topic	**Instructor**
9:00	Introductions & Background	Carlos
9:15	Requirements	Amruta
9:30	D1 ADA Inventory Maintenance	Carlos
10:00	**BREAK**	
10:15	Pedestrian Access Routes (Sidewalks/Paths)	Amruta
10:45	Construction/Alternate Pedestrian Access	Carlos
11:00	Sidewalk Ramps	Amruta
11:15	Curb Ramps	Carlos
11:30	Types	
	*Perpendicular	
	*Parallel	
	*Blended Transitions	
11:35	Detectable Warning Surfaces	Amruta
11:45 – 12:45 LUNCH BREAK		
AFTERNOON SESSION: 12:45 – 4:15 PM		
12:45	ADA Design and Labeling Tool	Ahmad/ Radoslaw
2:15	ADA/PROWAG Design Memorandum and D1 Project Details	Fawad
3:00	**BREAK**	
3:15	Pedestrian Street Crossings	Amruta
3:30	Accessible Pedestrian Signals (APS)	Carlos
3:45	On-Street Parking	Amruta
4:00	Miscellaneous – Transit, Utilities, Protruding Objects	Carlos

PROFESSIONAL DEVELOPMENT HOURS

6.0 PDH - Per Section 1380.325 of the Illinois Administrative Code, 1 PDH shall be equal to a minimum of 50 minutes of instruction or participation. These PDHs do not include any lunch time. This course contributes to the advancement, extension or enhancement of the professional skills in practice of professional engineering and is being developed and presented by persons with education and/or experience in the subject matter.

Illinois Department of Transportation

ADA-PROWAG

District 1 Training

1

Instructors. . .

Amruta Mate, P.E.
Project Manager/
ADA Coordinator
847 705-4330

Carlos Feliciano, P.E.
In-House Studies Unit Head/
ADA & Bikeway Coordinator
847 705-4106

DOT.D1.ADA@Illinois.gov

Fawad Aqueel, P.E.
Plan Preparation Section Chief
847 705-4247

Veselin Velichkov
Design Project Manager
847 705-4433

2

Introduction. . .

What we will cover:

- Background
- Requirements
- D1 ADA Inventory Maintenance
- Pedestrian Access Routes (Sidewalks/Paths)
- Alternate Pedestrian Access (Construction)
- Sidewalk Ramps
- Curb Ramps – Types, Detectable Warning Surfaces, Design
- Pedestrian Street Crossings (Crosswalks)
- Accessible Pedestrian Signals (APS)
- On-Street Parking
- Miscellaneous – Transit, Utilities, Protruding Objects, etc.

3

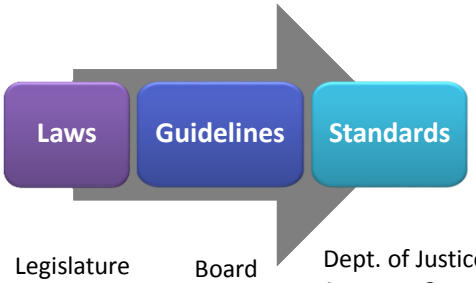
Background

A Review of the History of ADA/PROWAG

4

Background

Laws, Guidelines, Standards



Legislature — Board — Dept. of Justice/ Attorney General FHWA/IDOT

5

Background

STATE

Environmental Barriers Act (EBA) — Illinois

Enacted in 1985 — Amended in 1996

The Illinois Accessibility Code (IAC), published in 1997, (updated October 23, 2018) contains the design standards developed by the Capital Development Board

https://www2.illinois.gov/cdb/announcements/2018/Documents/Register%20Page.pdf

Background

STATE

Illinois Accessibility Code

Updated Effective October 23, 2018

Document Updates

- No longer has a table of contents, index or page numbers
- Now divided into chapters w/ illustrations & tables
- Historical Building section easier to read and interpret
- Gen. Exceptions to construction sites easier to read/interpret
- Updated reader friendly version coming soon

Requirement Updates

- Parking access isles can be shared between spaces
- Exercise Machines/Equipment, Play Areas, Pools accessibility
- New Facility compliance exemption if awarded prior to effective date and built within 12 months (10/23/19)
- Removed many discrepancies with 2010 ADA Standards

7

Background

STATE

Illinois Accessibility Code

Updated Effective October 23, 2018

Differences between IAC vs. 2010 ADA Standards

- Applies to **ALL** public facilities and state specific multi-story housing
- Addresses barrier removal only for existing facilities constructed after May 1, 1988 (vs Federal Safe Harbor provision)

I.E. facility built to 1991 ADA Std or before 3/15/12

- References additional standards relevant to the IAC and provides definitions unique to IAC to align with EBA and incorporates ADAAG
- Requires Statement of Compliance by an architect or engineer for projects with the cost of construction/alteration of $50,000 or more

PE Seal is our Alternate Statement of Compliance per IL PE Practice Act

- Mandates 20% of units in multi-story housing built after May 1, 1988, must be adaptable

8

Background

STATE

Illinois Accessibility Code

Updated Effective October 23, 2018

Differences between IAC vs. 2010 ADA Standards

- Has state-specific requirements regarding alterations that may threaten a historically significant building or facility

Authority to make determinations delegated to State by 2010 ADA Standards

- Includes state-specific exceptions to the requirement that multi-story buildings and facilities have a minimum of one accessible route connecting the different floors and mezzanine
- Requires accessible parking space signs to display the dollar amount of the state or local fine and be mounted following the state requirements
- In most cases, one must have a qualifying disability in order to file an ADA complaint/lawsuit. Without it, one cannot argue their civil rights were violated; however in Illinois, because the IAC is a building code, anyone can file an accessibility complaint.
- **However, BDE's position is that the requirements in IAC do not significantly apply to Public Roadways since the focus of the IAC is building and site development which can include transportation facilities within those sites and lead to the Public Right-of-Way.**
  - E.G. Chapter 5 addresses parking requirements but this appears to be limited **only to Buildings and Sites**, not on-street parking; as such, you can follow IAC for guidance but are not required to do so if altering on-street parking.

9

Background

STATE

Illinois Accessibility Code

Updated Effective October 23, 2018

Finding this Online

(A few kinks to note)

- IDOT Website

  www.idot.Illinois.gov
- Capital Development Board Website

  https://www2.illinois.gov/cdb/business/codes/Pages/default.aspx

10

Background

FEDERAL

Section 502 of the Rehabilitation Act of 1973

Public Members
Appointed by President
4-year terms

Federal Members
Represent various
federal agencies

11

Background

Americans with Disabilities Act (ADA) of 1990 & 2008 Amendment

- Signed into law by President Bush Sr. on July 26, 1990

  1st comprehensive civil rights law protecting people w/ disabilities
- No qualified person with a disability should be excluded from a program, service, or activity because of that disability
- Access Board established ADA Guidelines in 1991 & 2004
- **DOJ adopted 2010 ADA Standards based on 2004 Guidelines**
- Standards are enforced by the DOJ and DOT (FHWA)
- Required to follow standards as of March 15, 2012

12

Background

Americans with Disabilities Act of 1990 ADA

Title I: Employment
Title II: Public Programs & Services
Title III: Public Accommodations
Title IV: Telecommunications
Title V: Miscellaneous and Exclusions

Title II applies to all state and local governments regardless of funds received

13

Background

Pedestrian Facilities in the Public Right-of-way Accessibility Guidelines (PROWAG)

- Published in Federal Register July 26, 2011
- Supplemented on Feb. 13, 2013 to address shared use paths
- DOJ and DOT must adopt standards before it can be enforced (~18 month time frame)
- *On January 23, 2006, the FHWA issued a memorandum recognizing that **PROWAG standards "are the currently recommended best practices, and can be considered the state of the practice** that could be followed for areas not fully addressed by the present ADAAG standards."*

http://www.access-board.gov/guidelines-and-standards/streets-sidewalks/

14

Background

BLR&S Chapter 8 Transition Plan
Updated October 2013

LPAs must have an ADA Coordinator
Public Notice
Grievance Procedure
Design Standards/Specs/Details
Self Evaluation
Schedule & Budget for Improvements
Monitor & Update

15

Background

BLR&S Chapter 41 Special Design Elements

Updated October 2013

Incorporates:

PROWAG
ADA Standards for Accessible Designs (ADAAG)
Illinois Accessibility Code (IAC)
Uniform Federal Accessibility Standards (UFAS)
ILMUTCD
American National Standards Institute (ANSI)

16

Background

BDE Chapter 58 Special Design Elements

Updated January 2018

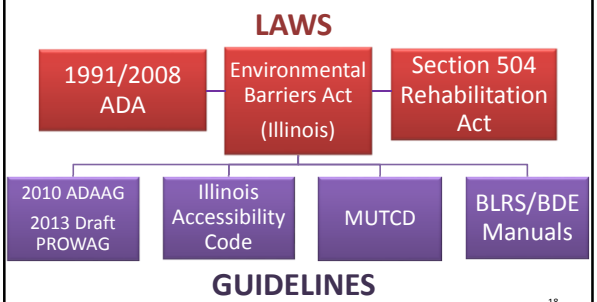
Section 504
Illinois Environmental Barriers Act
2010 ADAAG
Illinois Accessibility Code
Draft PROWAG

17

Background

So, what standards do we follow?

Hierarchy



18

The Requirements . . .

The ADA – PROWAG Requirements

19

The Requirements . . .

- **The Transition Plan**
- **IDOT's Transition Plan**
- **IDOT's ADA Coordinators**
- **Local Public Agency Transition Plans**
- **Urban Legends of ADA**
- **PROWAG/IAC/BDE/LR&S**

20

The Requirements . . .

The Transition Plan

- ADA required all agencies with 50 or more employees to create one
- Plan had to identify barriers & propose a plan for their elimination
- Agencies had one year to perform self-evaluation then develop a plan within the next 6 months
- All barriers had to be eliminated by **Jan. 26, 1995**

21

The Requirements . . .

IDOT's Transition Plan

IDOT is collecting compliance data on: sidewalks, crosswalks, ramps, signals, weigh stations, rest areas

22

The Requirements . . .

IDOT's Transition Plan

23

The Requirements . . .

IDOT's ADA Coordinators

Mike Brand, P.E., Interim ADA Policy Engineer

D1 – Amruta Mate/Carlos Feliciano, P.E.

D2 – Mike Kuehn
D3 – Scott Ferguson
D4 – Shana Kane
D5 – Scott Neihart
D6 – Sal Madonia
D7 – Neil Sandschafer
D8 – Alvin Nieves-Rosario
D9 – Carrie Nelsen

Local Roads – Tim Peters

24

The Requirements . . .

Local Public Agency (LPA) Transition Plans

Bureau of Local Roads and Streets
Circular Letter 2014-18
ADA Self Evaluation & Transition Plan
Oct. 2, 2014

"If an acceptable transition plan is not in place, **federal and state project authorizations may be withheld** on future projects utilizing federal or state funding."

25

The Requirements . . .

Urban Legends of ADA

We don't have to meet ADA because there is no federal funding – **FALSE!**

All state and local agencies must meet ADA requirements regardless of funding

Not all pedestrian routes must be made accessible – **FALSE!**

If someone without a disability can use the pedestrian facility, it must be accessible to all

26

The Requirements . . .

Urban Legends of ADA

If we can't make a route accessible, we can just remove the facilities – **FALSE!**

Removing pedestrian facilities is not an appropriate solution to addressing non-compliance

An unmarked crosswalk is not a legally defined crosswalk. – **FALSE!**

The Illinois Vehicle Code defines a crosswalk as the part of a roadway at an intersection within the connections of the lateral lines of the sidewalks (625 ILCS 5/1-113)

27

The Requirements . . .

PROWAG Scoping Requirements – R2

- **New facilities located in the public ROW – must meet**
- **Altered portions of existing facilities located in the public ROW – meet to max extent practicable within scope – Document!!!!**
- **Temporary and Permanent Facilities in the public ROW are not required where none exist, however….**

28

The Requirements . . .

- Existing facilities that have not been altered, shall not deny access to persons with disabilities.

29

The Requirements . . .

FHWA Guidance - Alterations

Links to webinar:

FHWA Technical Assistance on the ADA Requirements to Provide Curb Ramps through Resurfacing

https://connectdot.connectsolutions.com/p2lz0u6bt16/?launcher=false&fcsContent=true&pbMode=normal

https://connectdot.connectsolutions.com/p7r08bvr75l/?launcher=false&fcsContent=true&pbMode=normal

30

The Requirements . . .

Basic Guidance:

Ask, does this project impact the PAR?

If yes, need to bring any facility touching the impacted PAR into compliance

If no, do not need to address the facility; however, check to see where it is on priority list and address if feasible

31

The Requirements . . .

Pavement Treatment Types (BDE Fig. 58-1.A)

MAINTENANCE

Chip Seals	Joint Crack Seals	Joint repairs	Dowel Bar Retrofit
Fog Seals	Slurry Seals	Spot High-Friction Treatments	Pavement Patching
Scrub Sealing	Diamond Grinding		Surface Sealing
Crack Filling and Sealing			

ALTERATION

New Asphalt Layer	New Construction	Surface Course	Rehabilitation & Reconstruction
Mill & Fill / Mill & Overlay	Hot In-Place Recycling	Microsurfacing / Thin-Lift Overlay	
Cape Seals	Open-graded		

32

The Requirements . . .

IDOT Project ADA Improvements

(BDE 58-1.01 (b))

3P Resurfacings

- As of FY2015 all resurfacings must bring into compliance to the maximum extent practicable **ALL CURB RAMPS THAT ARE ALTERED & those within improvement limits if possible**
- Existing physical constraints include, but are not limited to, terrain, ROW, underground structures, adjacent developed facilities, drainage, or the presence of a notable natural or historic feature.

3R/Reconstruction

- All facilities within the improvement limits **SHALL** be made to be in compliance with PROWAG

33

The Requirements . . .

Complete Streets vs. PROWAG

Complete Streets - Illinois Highway Code (605 ILCS 5/4-220)

- Bike/Ped full consideration in planning & development
- Bike/Ped shall be established in conjunction with construction, reconstruction or other change of any State transportation facility within 1 mile of urban area
- Goal – creates bike/ped infrastructure **WHERE THERE IS NONE**

PROWAG (36 CFR Part 1190)

- Ensure sidewalks, crossings, signals, and other facilities for pedestrian circulation/use constructed or altered in the public ROW are accessible and usable by peds with disabilities
- Goal – compliance and equal access **WHERE FACILITIES EXIST**.

34

The Requirements . . .

What happens if requirements are not followed?

FEDERAL SIDE:

Because FHWA implements the standards for transportation facilities, **federal funds can be withheld** if an agency does not follow requirements.

DOJ has launched Project Civic Access to ensure counties, cities, towns, & villages comply with ADA. To date, there have been 210 settlement agreements with 195 localities.

https://www.ada.gov/civicfac.htm

35

The Requirements . . .

What happens if requirements are not followed? (continued)

STATE SIDE:

In Illinois, the Attorney General's office enforces the law. This office has indicated that a licensed engineer/architect who knowingly signs a design not meeting these requirements **risks disciplinary action.**

36

The Requirements . . .

Questions

D1 ADA Inventory Maintenance

D1 ADA Inventory Maintenance

38

D1 ADA Inventory Status

Inventory Status as of 2018

- **Crosswalks**
  - Total Facilities – 29,884 segments – 40% Compliant
    44% (13,102) accomplished in FY18
- **Curb Ramps:**
  - Total Facilities – 71,552 ramps – 32% Compliant (3% FY15)
    31.2% (22,073) accomplished FY18*
- **Accessible Pedestrian Signals (APS)****
  - Total Facilities – 21,386 – 6% Compliant**
    6% (1,334) accomplished FY18
- **Sidewalks**:
  - Total Facilities – 48,607 segments – n/a
- **Weigh Stations (12) & Rest Stops (1)** – Mostly Compliant

39

D1 ADA – Addressing Compliance

PROGRAMMING TOWARDS ADA COMPLIANCE

Total Annual ADA Program Estimate only—Based on a 25 year schedule	
Facility Type	Number of Facilities
Curb Ramps	1,900 ramps
Crosswalks[1]	294 intersections
Pedestrian Signals	57 intersections
Sidewalks[2]	4.8 million SF (1,458 segments)

[1]*Note: this represents an equiv. number as not all non-compliant crosswalks are in the same intersection.*
[2]*Note: The agency responsible for bringing sidewalks in the State ROW into compliance is Local Agency.*

40

D1 ADA Curb Ramp Retrofit

Projects Currently in Engineering Phase I

Approved Phase I Studies:

Project	DA	Letting	FY	Cost	Ramps Improved	Notes
McHenry	01/22/14	02CY14	2014	$438,127	129	CN-60X36
Lake	10/08/14	06CY17	2018	$248,000	336	CN-62A69
Kane	09/21/15	01CY17	2017	$722,000	197	CN-62A71
Will	12/11/15	06CT17	2018	$846,000	669	CN-62A72
DuPage	12/8/16	03CY18	2018	$1,200,000	180	CN-62D58
Totals				$3,454,127	1,511	

Ongoing Phase I Studies:

Project	DA	Letting	Cost	Ramps Improved	Notes
N. Cook	9/30/18	NP	TBD	4,835	M. Baker/RD
S. Cook	9/30/18	06CY19	TBD	4,270	Infrastructure/PH
Chicago	12/31/19	NP	TBD	TBD	Benesch/MMA
ROW-Lake/McHenry/Kane	6/30/18	NP	TBD	~1200	Strand/SA
ROW-DuPage/Will	12/31/20	NP	TBD	76	In-House/AM

41

D1 ADA Inventory Maintenance

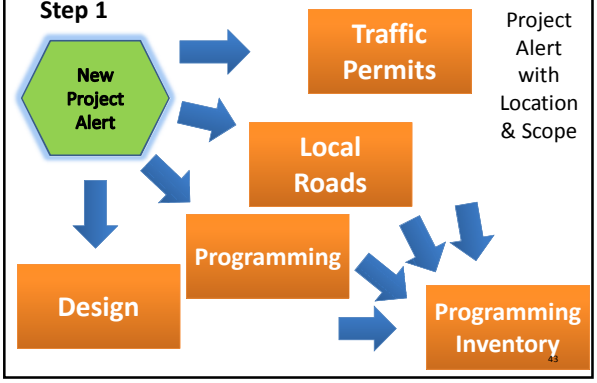
Updated Process per 2016 D1 ADA Memorandum:

- Step 1 – **Project Alert** (D1 PD0038): Bureaus will be required to submit a project alert whenever there is an improvement that will potentially alter a State roadway
  *Programming *Design *Local Roads *Traffic Operations
- Step 2 – **Inspection Sheet** (D1 PD0031): Bureaus altering facilities will inspect each facility altered & keep in their records
  *Local Roads *Traffic Operations *Construction
- Step 3 – **Inspection Summary** (D1 PD0039): Bureaus will provide a summary of inspections and compliance to ADA Coordinators. Any non-compliance:
  *Local Roads *Traffic Operations *Construction
  - Step 3A – (before letting) **ADA Statement of Maximum Extent Practicable** (BDE3101) & present at BDE/FHWA Meeting for approval from BDE
  - Step 3B – (after letting) **ADA Construction Concurrence** (BDE 5801) & email to DOT.D1.ADA@Illinois.gov for District ADA Coordinator Review & Approval
    *Programming *Design *Local Roads *Traffic Operations *Construction
- Step 4 – ADA Inventory is updated by the Bureau of Programming noting compliance & report annually to BDE/FHWA.
  *Programming

42

D1 ADA Inventory Maintenance

Step 1



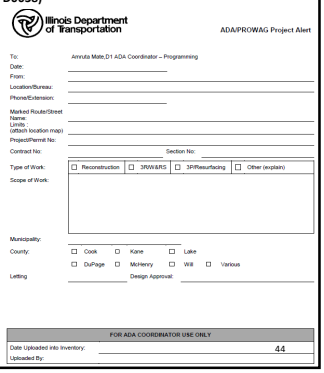
Project Alert with Location & Scope

43

D1 ADA Inventory Maintenance

Step 1 – Project Alert (D1 PD0038)

- Informs ADA Coordinators of Planned Improvements
- Just needs ADA/PROWAG Project Alert Form found in SharePoint & Location Map with Limits


Illinois Department of Transportation

ADA/PROWAG Project Alert

To: Annuta Mate,D1 ADA Coordinator – Programming

Date:

From:

Location/Bureau:

Phone/Extension:

Marked Route/Street Name:

Limits (attach location map)

Project/Permit No:

Contract No: Section No:

Type of Work: ☐ Reconstruction ☐ 3R/W&RS ☐ 3P/Resurfacing ☐ Other (explain)

Scope of Work:

Municipality:

County: ☐ Cook ☐ Kane ☐ Lake ☐ DuPage ☐ McHenry ☐ Will ☐ Various

Letting Design Approval:

FOR ADA COORDINATOR USE ONLY

Date Uploaded into Inventory:

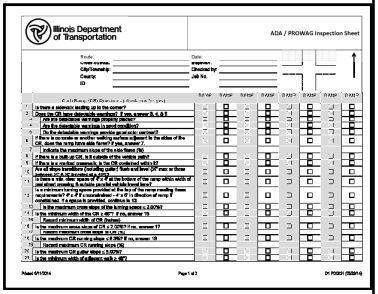
Uploaded By:

44

D1 ADA Inventory Maintenance

Step 2 - ADA/PROWAG Inspection Sheet (D1 PD0031)

- **For your use only, not required to be turned in**
- Can also utilize ADA Field Guide Online & SharePoint Manuals

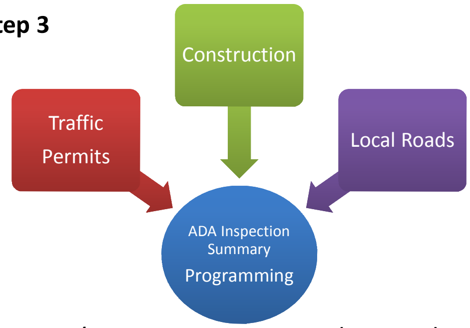

Illinois Department of Transportation

ADA / PROWAG Inspection Sheet

45

D1 ADA Inventory Maintenance

Step 3



ADA/PROWAG Inspection Summary (D1 PD0039)
to update the ADA Inventory (DOT.D1.ADA@Illinois.gov)

46

D1 ADA Inventory Maintenance

Step 3 – ADA/PROWAG Inspection Summary (D1 PD0039)

Illinois Department of Transportation

ADA/PROWAG Inspection Summary

Job/Permit No: ______ Date: ______
Route: ______ Inspector: ______
Limits: ______ Resident Engineer Checked: ______
Municipality: ______ County: ______

FOR ADA COORDINATOR USE ONLY
Date Uploaded into ADA Inventory: ______ Uploaded By: ______

List of facilities altered by construction improvement including curb ramps, crosswalks (marked/unmarked), Traffic Signals (APS), and/or sidewalks. For those facilities that are not compliant, attach ADA/PROWAG Inspection Sheet (D1 PD0031), ADA Construction Concurrence (BDE 5801), and supporting documentation justifying non-compliance. These must be presented by the Bureau in charge of the alteration at the next monthly FHWA/BDE Coordination Meeting. Submit the ADA/PROWAG Inspection Summary form to the D1 ADA Coordinator.

Marked Route/Street	Cross Street (for SW, include distance to nearest cross street)	Corner or Leg corner-NE/NW/SE/SW Leg –N/S/E/W	Crossing Direction (NB/SB/EB/WB)	Facility Type	ADA/PROAG Compliance		**FOR NON-COMPLIANT FACILITIES** Inspector must complete the following
				☐ Curb Ramp ☐ Crosswalk ☐ Traffic Signal ☐ Sidewalk	☐ Compliant	☐ Non-Compliant	☐ BDE 5801 Completed w/ Documentation Date Presented to FHWA/BDE:
				☐ Curb Ramp ☐ Crosswalk ☐ Traffic Signal ☐ Sidewalk	☐ Compliant	☐ Non-Compliant	☐ BDE 5801 Completed w/ Documentation Date Presented to F HWA/BDE:
				☐ Curb Ramp ☐ Crosswalk ☐ Traffic Signal ☐ Sidewalk	☐ Compliant	☐ Non-Compliant	☐ BDE 5801 Completed w/ Documentation Date Presented to FHWA/BDE:
				☐ Curb Ramp ☐ Crosswalk ☐ Traffic Signal ☐ Sidewalk	☐ Compliant	☐ Non-Compliant	☐ BDE 5801 Completed w/ Documentation Date Presented to FHWA/BDE:
				☐ Curb Ramp ☐ Crosswalk ☐ Traffic Signal ☐ Sidewalk	☐ Compliant	☐ Non-Compliant	☐ BDE 5801 Completed w/ Documentation Date Presented to FHWA/BDE:

NOTE UPDATE COMING IN 2019 – USE SHAREPOINT FORM

47

Printed 7/6/2016 Page 1 of 2 D1 PD0039 (02/16/16)

D1 ADA Inventory Maintenance

Step 3A–Planning/Design

Non-Compliance

BDE Form 3101
Submit ADA Statement of Maximum Extent Practicable
To D1 ADA Coordinator
(DOT.D1.ADA@Illinois.gov)
(2 weeks prior to monthly FHWA Coordination Meeting)

Must include:
plan and profile sheets,
elevations, photos, any other relevant documentation along with design alternatives considered
BDE 31-8.04 (c)
&
Presents to BDE/FHWA for approval at a Coordination Meeting

BLRS – MEP on Local Roads are approved by Local Agency via letter to IDOT stating they acknowledge list of locations to be built to the MEP and added to their Inventory

Illinois Department of Transportation

ADA Statement of Maximum Extent Practicable

Route: FAP 324 | Street: State St. | Marked: IL-23 | Contract #: 62C84 | State Job #: C-91-391-16
Section: (23&24)RS-2 | County: McHenry | Municipality: Marengo
Project Limits: US 14 to I-90 (Jane Addams Memorial Tollway)
Project Length: 81788 ft=15.49 miles
Estimate of Cost: | Type of Project (e.g. SMART, 3R, Reconstruction): Resurfacing and ADA Compliance
Brief Project Description: Roadway Resurfacing and ADA Ramps

DOCUMENTATION OF MAXIMUM EXTENT PRACTICABLE (MEP)

Location(s) where MEP is Requested: Northeast corner of IL 23 and Telegraph St
Design Element for which MEP is Requested and Proposed Design Value: Long. slope of NE ramp to tie into existing varies from 85 to 9.8%, and cross slope 2.7%.
Design Element Policy Value: Max Long. slope = 8.3%, cross slope = 2% | Coordination Meeting Date: | Prepared By: Ivan Diaz | Date: 09/06/17

Specify and Explain Reason(s) why Full Compliance is Infeasible
☐ Structural (e.g. bridge beams, buildings, basements, foundations)
☐ Historic Preservation (e.g. historic buildings, districts, monuments)
☒ Topography (e.g. steep existing road grade exceeds ADA compliant maximum)
☐ Utilities (Project scope would not otherwise require utility relocation)
☒ Right-of-Way (Project scope would not otherwise require R.O.W)
☐ Other

Discuss Alternatives Considered (Attach supporting documentation, e.g. plan and profile sheets, photos)

APPROVAL/DISAPPROVAL
BDE Approval Date: 10/18/17 | BDE Disapproval Date:
BDE Comments on Disapproval:

Printed 10/19/17 Page 1 of 1 BDE 3101 (Rev. 04/15/16)

D1 ADA Inventory Maintenance

Lessons Learned…

Illinois Department of Transportation

ADA Statement of Maximum Extent Practicable

Route	Street	Marked	Contract #	State Job #
FAP 324	State St.	IL-23	62C84	C-91-391-16

Section	County	Municipality
(23&24)RS-2	McHenry	Marengo

Project Limits
US 14 to I-90 (Jane Addams Memorial Tollway)

Project Length
81788 ft=15.49 miles

Estimate of Cost	Type of Project (e.g. SMART, 3R, Reconstruction)
	Resurfacing and ADA Compliance

Brief Project Description
Roadway Resurfacing and ADA Ramps

DOCUMENTATION OF MAXIMUM EXTENT PRACTICABLE (MEP)

Location(s) where MEP is Requested
Northeast corner of IL 23 and Telegraph St

Design Element for which MEP is Requested and Proposed Design Value
Long. slope of NE ramp to tie into existing varies from 8% to 9.8% and cross slope 2.7%

Design Element Policy Value	Coordination Meeting Date	Prepared By	Date
Max Long. slope = 8.3%, cross slope = 2%			09/06/17

Specify and Explain Reason(s) why Full Compliance is Infeasible

49

D1 ADA Inventory Maintenance

Lessons Learned…

ADA Statement of Maximum Extent Practicable

Attachment A

NE Corner of IL 23 and Telegraph Street

Description of Situation:

The existing cross slope at the northeast leg of the corner is 2.7% and existing running slope is between 8%-9.8%. In order to provide a lower landing / turning space, the cross slope of the northeast leg must exceed the maximum in order to tie into the existing sidewalk. The maximum allowable longitudinal slope is 8.3% and the maximum allowable cross slope is 2% according to IDOT Standard Drawing 424011 Corner Parallel Curb Ramps for Sidewalks. Approval of an ADA Statement of Maximum Extent Practicable (MEP) is requested for the longitudinal slope and Cross-slope of the northeast leg.

Alternatives Considered:

1. Modifying the street profile or to lower the sidewalk. This alternative was not considered because this project scope of work does not include profile correction and pole relocation..

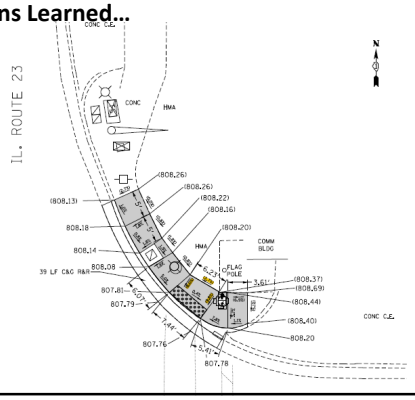
2. Relocating the ramp. There is no more favorable location since the presence of Light Pole, Transmission Pole and building location further limit any relocation.

Benefits of the proposed design:

The proposed design provides for a lower landing. This will provide pedestrians and wheelchairs a location to recover from the steep slope.

D1 ADA Inventory Maintenance

Lessons Learned…



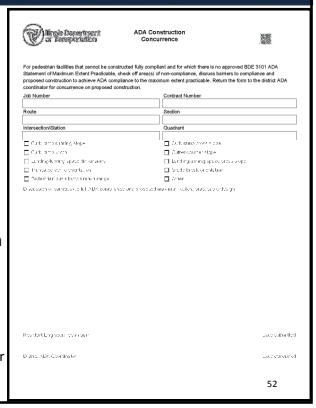
D1 ADA Inventory Maintenance

Step 3B – Construction Non-Compliance

BDE Form 5801
Submit to D1 ADA Coordinator (DOT.D1.ADA@Illinois.gov)

Must include:
plan and profile sheets, elevations, photos, any other relevant documentation along with design alternatives considered
BDE 31-8.04 (c)
for **District Approval**

BLRS – Construction Concurrences on Local Roads are approved by Local Agency via letter to IDOT stating list of locations to be built non-compliant and added to their Inventory

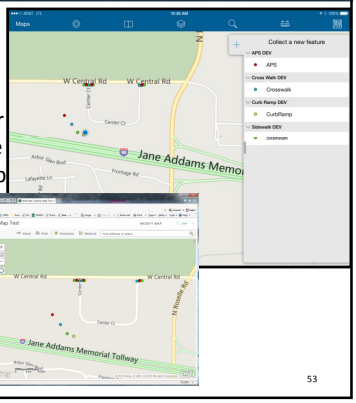

ADA Construction Concurrence

52

D1 ADA Inventory Maintenance

Step 4 – Inventory Update

Available online for **INTERNAL** use using your desktop or tablet/mobile thru ArcGIS Collector App



53

The Requirements . . .

Questions

The Technical Requirements . . .

Pedestrian Access Routes
(sidewalks/shared-use paths)

Pedestrian Access Routes – R302

The Technical Requirements . . .

Continuous Width – R302.3

56

The Technical Requirements . . .

Misplaced pole foundations can create a non-compliant PAR

Overgrown grass that cannot be maintained can create a non-compliant PAR

Continuous Width – R302.3

57

The Technical Requirements . . .

Continuous Width – R302.3

58

The Technical Requirements . . .

Keep in mind landscaping can grow to block the PAR

Parking placement can impact the PAR

Continuous Width – R302.3

59

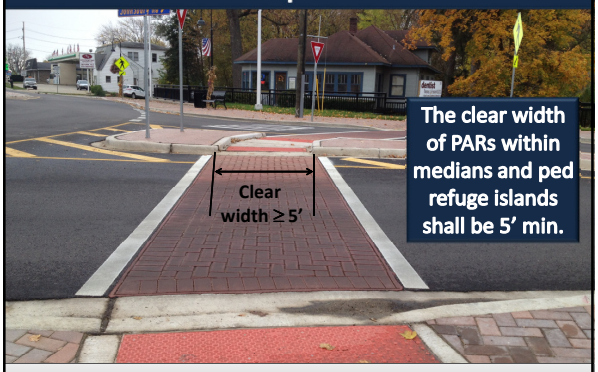
The Technical Requirements . . .

Keep in mind snow removal is required:
http://www.fhwa.dot.gov/civilrights/programs/ada_sect504qa.htm

Continuous Width – R302.3

60

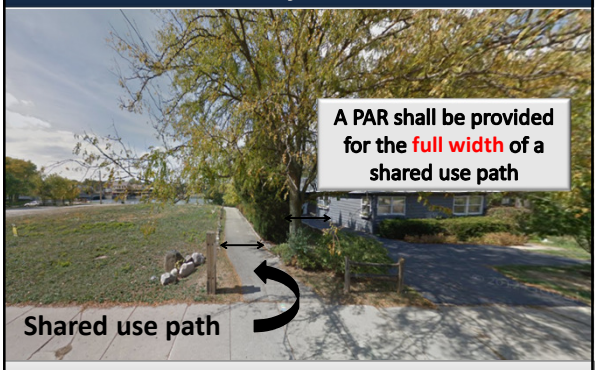
The Technical Requirements . . .



Continuous Width – R302.3

61

The Technical Requirements . . .

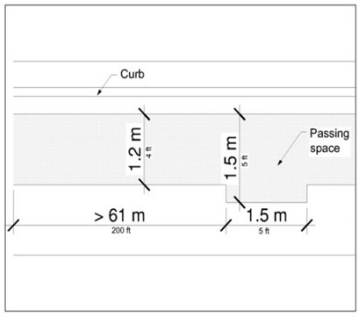


Continuous Width – R302.3.2

62

The Technical Requirements . . .

Figure R302.4 Passing Spaces



Where PAR clear width is 4', provide a 5' x 5' passing space every 200'

Passing Space – R302.4

63

The Technical Requirements . . .

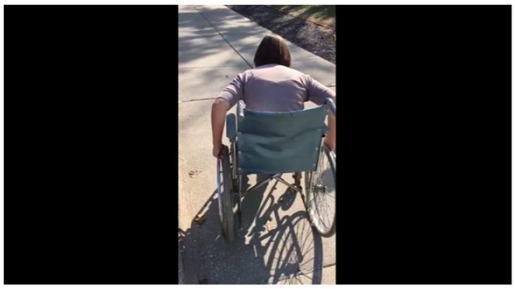
5% MAX.
or
≤ Road Grade

Grade – R302.5

64

The Technical Requirements . . .

What is a Suitable Grade?

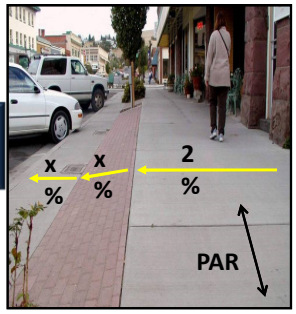


Grade – R302.5

65

The Technical Requirements . . .

Cross slope must be ≤ 2%



Cross Slope – R302.6

66

The Technical Requirements . . .

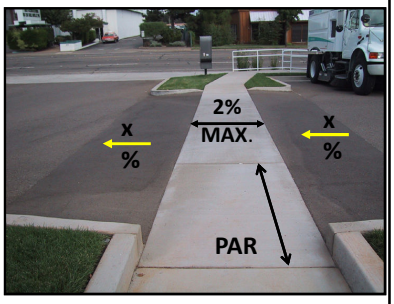
Cross Slope

Cross Slope – R302.6 67

The Technical Requirements . . .

Driveways

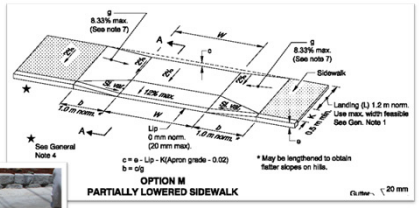
Best practice is to carry the sidewalk through the driveway

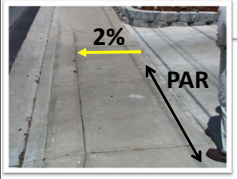


Cross Slope – R302.6 68

The Technical Requirements . . .

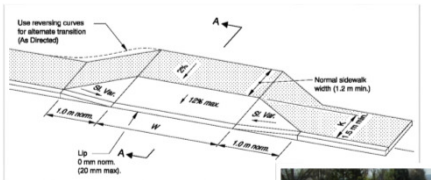
Driveways





Cross Slope – R302.6 69

The Technical Requirements . . .



Driveways

Cross Slope – R302.6

70

The Technical Requirements . . .

Driveway Cross Slope

Cross Slope – R302.6

71

The Technical Requirements . . .

Is a construction tolerance allowed?

- Nope

IDOT is currently designing for:

- 1.5% cross slopes
- 1:14 (7.14%) running slopes

Keep this in mind when designating slopes/measurements on plans

Tolerances

72

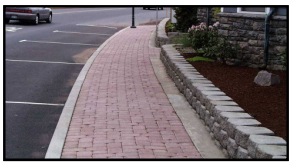
The Technical Requirements . . .

Firm Stable Slip resistant

Surfaces – R302.7 73

The Technical Requirements . . .

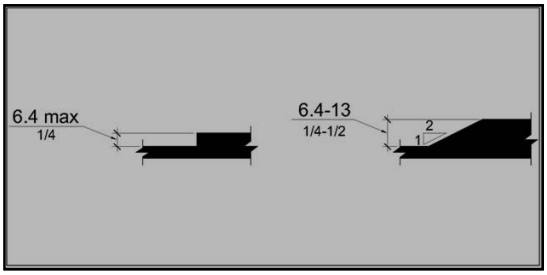
Examples of surfaces that might not be ideal



Surfaces – R302.7 74

The Technical Requirements . . .

Vertical Discontinuities



Surfaces – R302.7 75

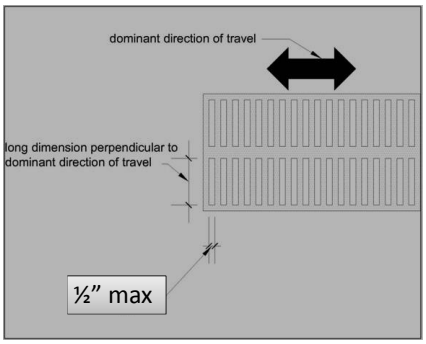
The Technical Requirements . . .

Vertical Discontinuities

Trip Hazards > ¼”

Surfaces – R302.7 76

The Technical Requirements . . .



Horizontal Openings

Surfaces – R302.7 77

The Technical Requirements . . .

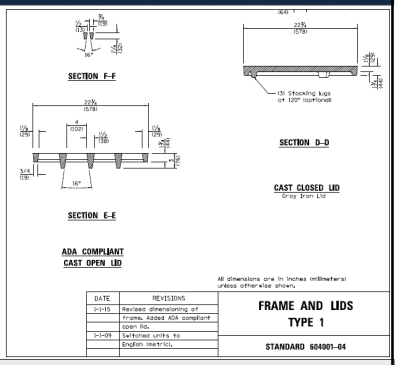
Horizontal Openings

Surfaces – R302.7 78

The Technical Requirements . . .

Horizontal Openings

Spacing ½" max

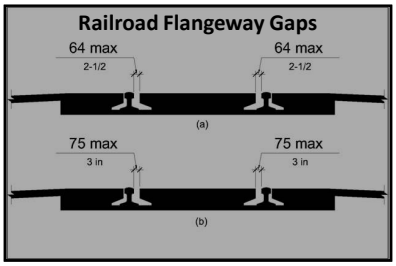


Surfaces – R302.7

79

The Technical Requirements . . .

Flangeway Gaps at Pedestrian Rail Crossings



Non-freight

Freight

Surfaces – R302.7

80

The Technical Requirements . . .

Flangeway Gaps at Pedestrian Rail Crossings

Surfaces – R302.7

81

The Technical Requirements . . .

Construction/Alternate Pedestrian Access Routes

Alternate Pedestrian Access Routes – R303

The Technical Requirements . . .

IDOT Work Zone Traffic Control

BDE 58-1.01(c) – Maintaining Accessibility in Construction

- **MUST be maintained consistent with the features in the existing facility.**
- **Designer may need to provide for reconstruction of certain curb ramps or temporary facilities outside of project limits at different times to maintain accessibility**

BDE 55-2.01(d) – Pedestrians/Bicyclists

- **Work should be done in a manner that does not disrupt otherwise,**
- **Follow MUTCD guidance for alternate routes**

Alternate Pedestrian Routes—BDE 55 & 58

The Technical Requirements . . .

IDOT Work Zone Traffic Control

Guidelines:

- **Separation** – physically separate ped/bikes & vehicles where practical
- **Duration** – plan construction to disrupt shortest practical time or during non-peak times
- **Detours** – pedestrian detours **SHOULD BE AVOIDED**, if used, design to minimize adverse travel & crossings
  - **Rarely are observed**
  - **Cost of an accessible detour might outweigh cost of maintaining the existing access route.**

Alternate Pedestrian Routes—BDE 55 & 58

The Technical Requirements . . .

PROWAG R303 → R205 → Chapter 6 of the MUTCD

MUTCD Section 6D.01

- **SHALL** provide advance notification of sidewalk closure
- **SHALL** provide adequate pedestrian access and walkways through Temporary Traffic Control

MUTCD Section 6D.02

- Temporary facilities **SHALL** be detectable and accessible
- Audible information devices **SHOULD** be used

Alternate Pedestrian Routes – R303 85

The Technical Requirements . . .

IDOT Work Zone Traffic Control

Temporary Sidewalks (BDE 55-2.01(d)):

- **Width**
  - Same as existing but minimum 4 ft.
  - Wider should be considered w/ high ped volume
  - If < 5 ft - provide 5 ft x 5 ft passing space every 200 ft
- **Surface**
  - Firm, stable & slip resistant
  - *If remaining in place > 4 weeks, provide 2 in. Cement/Asphalt surface (material at contractor's option)
  - *If < 4 weeks, 3 in. compacted aggregate may be used

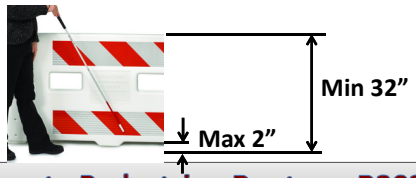
Alternate Pedestrian Routes—BDE 55 86

The Technical Requirements . . .

Channelizing Devices – Sec. 6F.63 MUTCD

Devices shall be detectable:

- Continuous detectable bottom/top surfaces
- Bottom shall be no higher than 2 in
- Top shall be no lower than 32 in



Alternate Pedestrian Routes – R303 87

The Technical Requirements . . .

- **Same-side alternate routes**
  - ✓ extra crossings increase risk
- **Covers temporary facilities**
  - ✓ street fairs, block parties, farmers' markets
- **MUTCD (6D.02)**
  - ✓ APS and audible information devices SHOULD be used
  - ✓ Engineering Judgment SHOULD be used

Alternate Pedestrian Routes – R303 88

The Technical Requirements . . .

Not acceptable

Alternate Pedestrian Routes – R303 89

The Technical Requirements . . .

Acceptable examples

Alternate Pedestrian Routes – R303 90

The Technical Requirements . . .

Acceptable examples

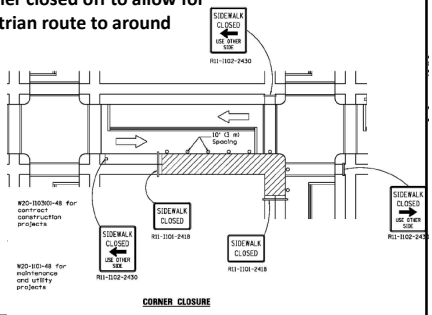
Alternate Pedestrian Routes – R303 91

The Technical Requirements . . .

Highway Standard 701801 – Sidewalk Closure
Note: only one corner closed off to allow for An alternate pedestrian route to around construction

As of 04CY17 this general note is now included in all resurfacing contracts:

"Contractor shall maintain pedestrian access at all times during construction"

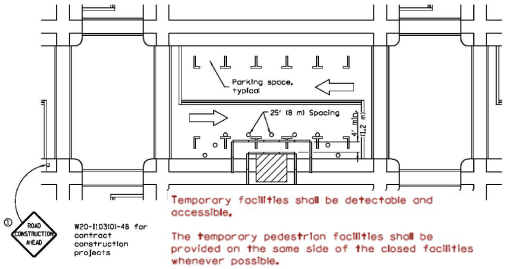


CORNER CLOSURE

Alternate Pedestrian Routes – R303 92

The Technical Requirements . . .

Highway Standard 701801 – Sidewalk Closure
Temporary facilities shall be provided & this standard is used in conjunction with other Traffic Control & Protection Standards



Alternate Pedestrian Routes – R303 93

The Technical Requirements . . .

Acceptable examples

Alternate Pedestrian Routes – R303 94

The Technical Requirements . . .

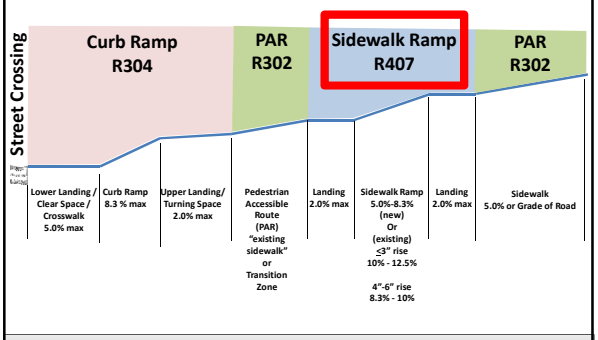
Questions

The Technical Requirements . . .

Sidewalk Ramps

96

The Technical Requirements . . .



Access Routes vs. Sidewalk Ramps vs. Curb Ramps

The Technical Requirements . . .

Ramps

- 5% ≤ Running Slope ≤ 8.3%
  existing facilities ADAAG Table 405.2/IAC/BDE Figure 58-1.F allow:
  - 10%-12.5% for 3" rise or
  - 8.3%-10% for 6" rise
- Cross Slope ≤ 2%
- Clear Width (w/ or w/o handrails) ≥ 3' (36")
- Rise ≤ 2.5 feet (30 inches) max
  - beyond this you'll need a landing to continue your rise
- Landings at top and bottom of each ramp run

Ramps—R407 (BDE 58-1.08) 98

The Technical Requirements . . .

Ramp Landings

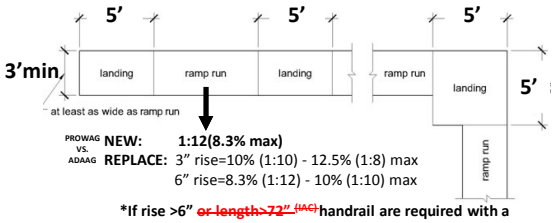
- Landing slope in any direction 2% max
- Width is equal to width of widest ramp
  - If using Handrails, min. 3 feet between handrails
- Length minimum 5 feet
- If change in direction at landing, landing must measure at least 5 feet by 5 feet
- Surface shall be firm, stable, & slip resistant

Ramps—R407 (BDE 58-1.08) 99

The Technical Requirements . . .

Ramp Landings

STRAIGHT **CHANGE IN DIRECTION**



PROWAG vs. ADAAG **NEW:** **1:12(8.3% max)**
REPLACE: 3" rise=10% (1:10) - 12.5% (1:8) max
6" rise=8.3% (1:12) - 10% (1:10) max

***If rise >6" ~~or length>72" (IAC)~~ handrail are required with a Max Rise of 2.5' (30")**

Ramps—R407 (BDE 58-1.08) 100

The Technical Requirements . . .

Ramps and Handrails

- **Ramp runs with a rise >6 inches (R407/409 & IAC 405.8)**
  ~~or horizontal projection (i.e. length) >72" (IAC) long~~ shall have handrails
- **Provide edge protection (R407.9.1 & IAC 405.9) on each side of ramp run and ramp landing**
  - **Extend the ramp run or landing ≥ 12 inches beyond inside face of the handrail (R409)**
  - **If you cannot, then use barrier/curb min. 2" high**
- **Provide a curb or barrier preventing passage of 4-inch sphere within 4 inches of surface**

Handrails—R409 (BDE 58-1.08) 101

The Technical Requirements . . .

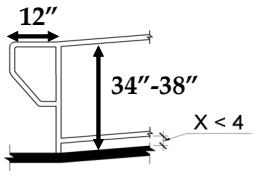
Handrails

- **Provide handrails on both sides of ramps and stairways (R409.2)**
- **Shall be continuous within full length of ramp run or stair flight**
- **34" ≤ Top of gripping surface ≤ 38" above walking/ramp surface**
- **Handrails shall extend 12" min. beyond ramp runs**

Handrails—R409 (BDE 58-1.08) 102

The Technical Requirements . . .

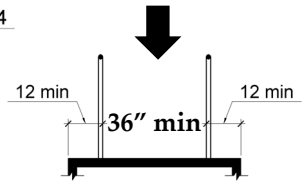
Ramps and Handrails



Barrier 2″ high min (rail/curb)

OR

12″ extended platform

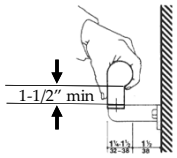


Handrails—R409 (BDE 58-1.08) 103

The Technical Requirements . . .

Handrails

Clear space between handrail and wall: 1.5″
Mounted between 34″ and 38″ above ramp
Shall not rotate within their fittings



Handrails—R409 (BDE 58-1.08) 104

The Technical Requirements . . .

Handrails

HOWEVER!

Handrails along State Highways are strongly discouraged as they pose a hazard along the roadway

USE WITH CAUTION & SPARINGLY

Consider only when:

- Perpendicular to the direction of roadway travel and outside the clear zone

Most other cases consider instead:

- Transition Zones if connecting to existing
- Acquiring ROW to allow curved PAR at 5% max running slope
- Using 15-ft Rule

Handrails—R409 (BDE 58-1.08) 105

The Technical Requirements . . .

Appropriate Use of Handrails in the Public ROW

Handrails—R409 (BDE 58-1.08)

106

The Technical Requirements . . .

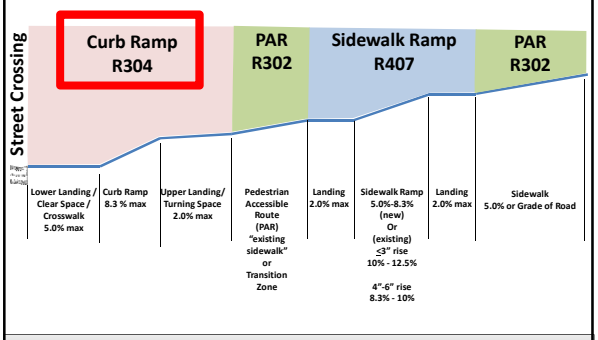
Questions

The Technical Requirements . . .

Curb Ramps
(at street crossings)

All Ramp Types – R305

The Technical Requirements . . .

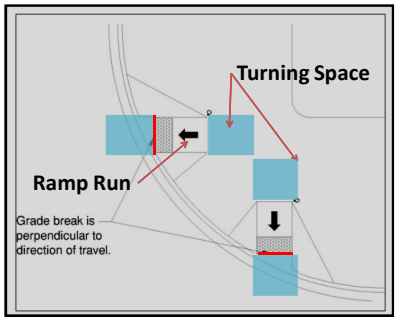


Access Routes vs. Sidewalk Ramps vs. Curb Ramps

The Technical Requirements . . .

Grade breaks:

- Can't be located on the ramp run or turning space
- Must be Perpendicular to direction of travel



Grade Breaks – R304.5.2 110

The Technical Requirements . . .

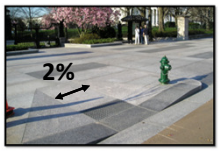
Perpendicular Grade Break

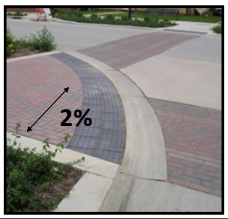
Grade Breaks – R304.5.2 111

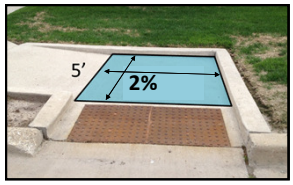
The Technical Requirements . . .

Cross slope shall be ≤ 2% at:

- Curb Ramps
- Blended Transition
- Turning Spaces







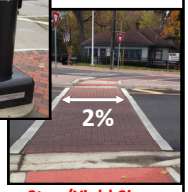
Cross Slope – R304.5.3 112

The Technical Requirements . . .

However, at pedestrian street crossings:

without yield/stop (i.e. Uncontrolled/Traffic Signals) cross slope shall be ≤ 5%

Traffic Signal

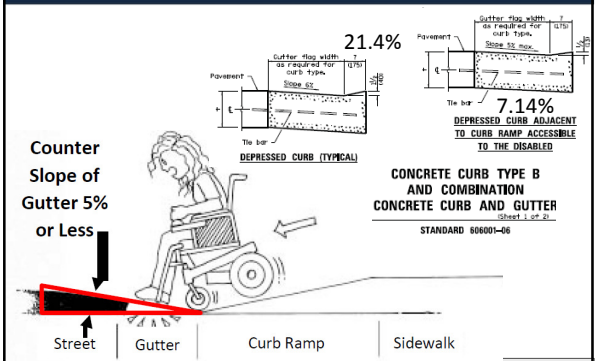


Stop/Yield Signs

mid-block crossing cross slope can be ≤ street grade

Cross Slope – R304.5.3 113

The Technical Requirements . . .

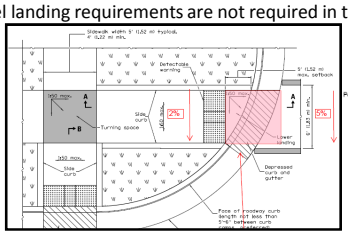


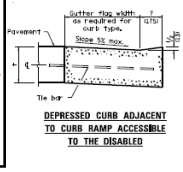
Counter Slope – R304.5.4 114

The Technical Requirements . . .

Transition from Lower Landing to Crosswalk

A curb ramp at a cross slope of 2% is allowed to transition to a crosswalk at a cross slope of 5% at a signalized intersection at the lower landing area because you are going from one compliance to the next and the level landing requirements are not required in this case.





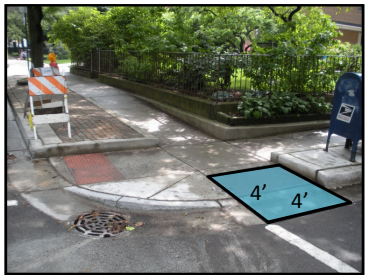
DEPRESSED CURB ADJACENT TO CURB RAMP ACCESSIBLE TO THE DISABLED

Transition to Crosswalk

115

The Technical Requirements . . .

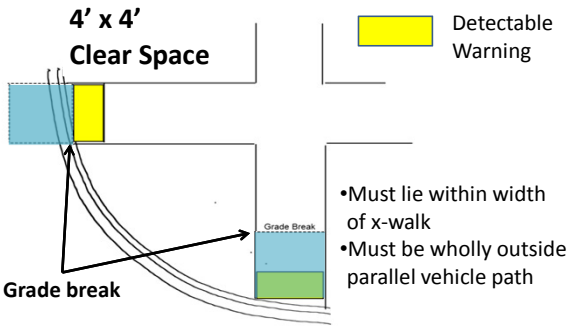
Provide a min 4' x 4' clear space beyond the grade break. Must be width of crossing and outside the parallel vehicle lane



Clear Space – R304.5.5

116

The Technical Requirements . . .

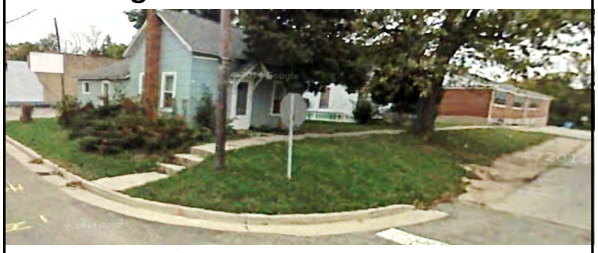


Clear Space – R304.5.5

117

The Technical Requirements . . .

Chasing Grade & the 15-foot rule

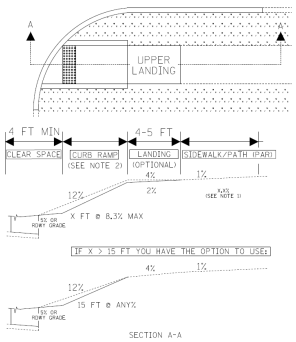


The running slope of the curb ramp shall be 5 % minimum and 8.3 % maximum but shall not require the ramp length to exceed 15.0 ft

Running Slope / Grade Break – R304.2.2

The Technical Requirements . . .

Exhibit in CADD Blue Menu under Help – ADA Info

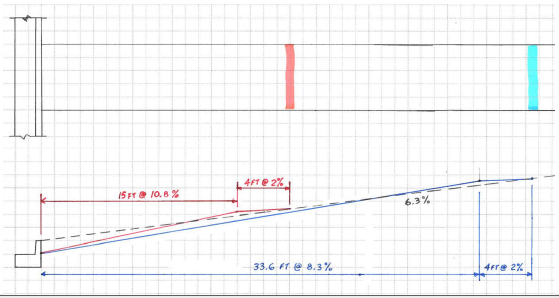


15 FT Rule

119

The Technical Requirements . . .

The running slope of the curb ramp shall be 5% min and 8.3% max but shall not require the ramp length to exceed 15.0 ft.

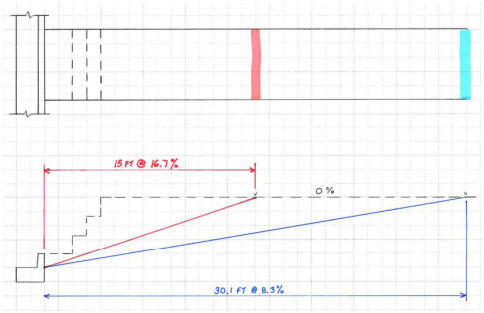


15 FT Rule

120

The Technical Requirements . . .

Example – NOT "chasing grade"



15 FT Rule

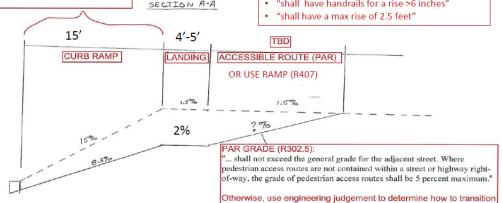
121

The Technical Requirements . . .

Chasing Grade & the 15-foot rule

15 FOOT RULE (R304):
"The running slope of the curb ramp shall be 5 percent minimum and 8.3 percent maximum but shall not require the ramp length to exceed 4.5 m (15.0 ft). "

RAMPS (R407):
- "Ramp runs shall have a running slope between 5% and 8.3% max"
- "shall have 5-foot long landings at top/bottom"
- "shall have handrails for a rise >6 inches"
- "shall have a max rise of 2.5 feet"



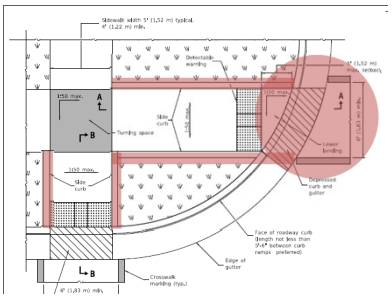
PAR GRADE (R302.5):
"... shall not exceed the general grade for the adjacent street. Where pedestrian access routes are not contained within a street or highway right-of-way, the grade of pedestrian access routes shall be 5 percent maximum."

Otherwise, use engineering judgement to determine how to transition back to the existing path. You're allowed a transition segment between the compliant PAR and the circulation path. Guidance can be sought from your District ADA Coordinator. E.G. you can consider using 15 ft max length at any slope or 1:12 max slope at any length.

Running Slope / Grade Break – R304.2.2

The Technical Requirements . . .

Perpendicular Curb Ramp Standard 424004-11



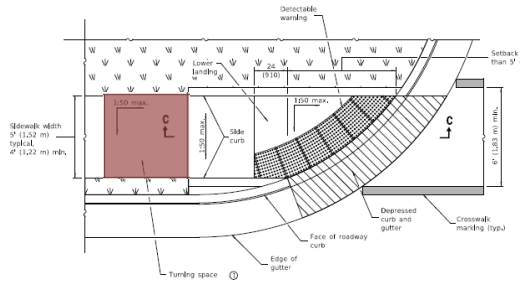
SIDE CURBS NOT REQUIRED / LOWER LANDING vs CLEAR SPACE

IDOT vs PROWAG

123

The Technical Requirements . . .

Perpendicular Curb Ramp Standard 424004-11



UPPER LANDING REQUIRED ONLY AS A TURNING SPACE FOR INTERSECTING SIDEWALK

IDOT vs PROWAG

124

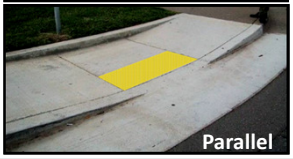
The Technical Requirements . . .

Types of Curb Ramps Discussed:

- Perpendicular
- Parallel
- Combined Curb Ramps
- Blended Transitions / Depressed Corners
- Diagonal

Curb Ramps & Blended Transitions – R304

The Technical Requirements . . .



Summary of Types

Curb Ramps & Blended Transitions – R304

The Technical Requirements . . .

Perpendicular Curb Ramps

Perpendicular Curb Ramps – R304.2

The Technical Requirements . . .

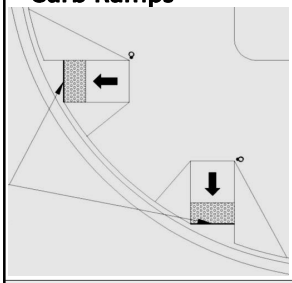
Perpendicular:

running slope (5 to 8.3%) cuts through or is **built up to the curb at right angles or meets the gutter break at right angles** where the curb is curved.

Curb Ramps & Blended Transitions – R304

The Technical Requirements . . .

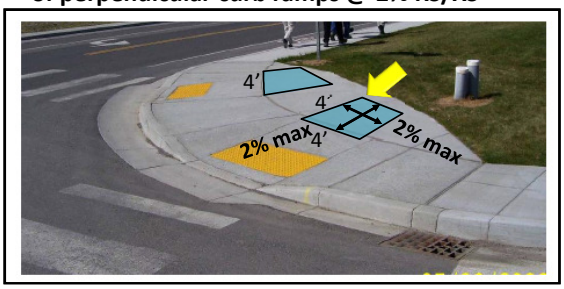
Perpendicular Curb Ramps



Curb Ramps & Blended Transitions – R304

The Technical Requirements . . .

Provide a minimum 4' x 4' turning space at top of perpendicular curb ramps @ 2% RS/XS

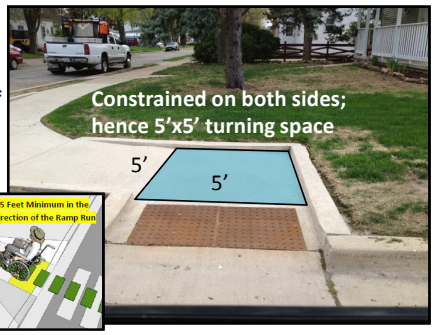


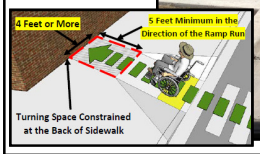
Turning Space – R304.2.1

130

The Technical Requirements . . .

If constrained (by curbs/bldgs) provide minimum 4' by 5' in direction of ramp run



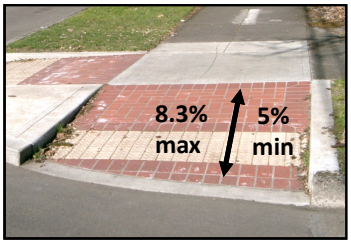


Turning Space – R304.2.1

131

The Technical Requirements . . .

Perpendicular Ramps



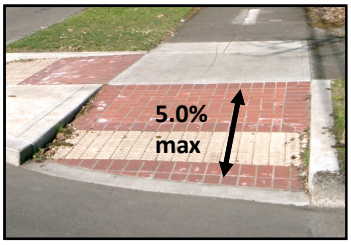
5% ≤Running slope ≤ 8.3%

Running Slope / Grade Break – R304.2.2

The Technical Requirements . . .

Blended Transition

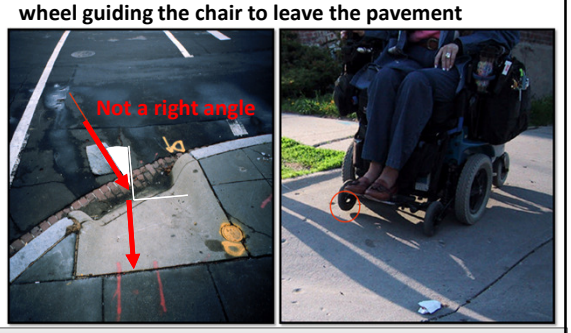
Running slope ≤ 5%



Running Slope / Grade Break – R304.2.2

The Technical Requirements . . .

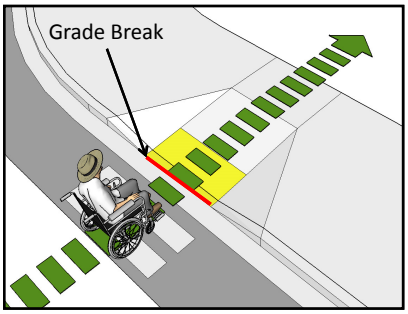
Incorrect placement of the grade break causes the wheel guiding the chair to leave the pavement



Running Slope / Grade Break – R304.2.2

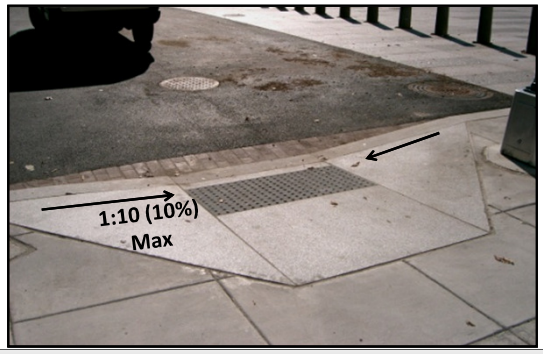
The Technical Requirements . . .

Design question becomes – where do you place the transitions and grade breaks and still be compliant?



Running Slope / Grade Break – R304.2.2

The Technical Requirements . . .



Flared Sides – R304.2.3

136

The Technical Requirements . . .

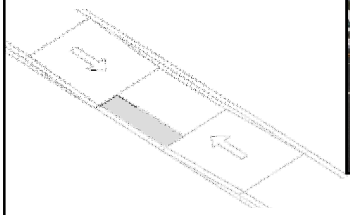
Parallel Curb Ramps

Parallel Curb Ramps – R304.3

The Technical Requirements . . .

Parallel:

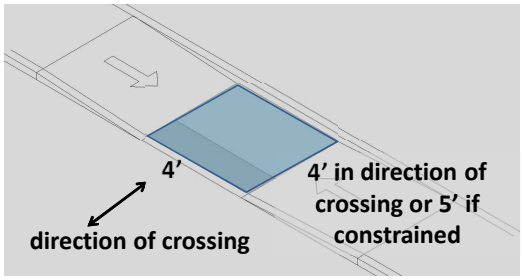
running slope that is in-line with the direction of sidewalk travel and lower the sidewalk to a level turning space where a turn is made to enter the pedestrian street crossing.



Curb Ramps & Blended Transitions – R304

The Technical Requirements . . .

Provide a min. 4' x 4' space at bottom of curb ramp

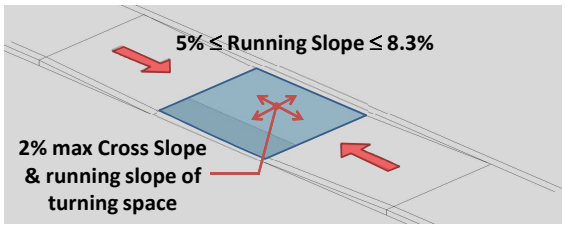


Turning Space – R304.3.1

139

The Technical Requirements . . .

Running slope of ramp shall be in line with direction of sidewalk travel and be 5% min and 8.3% max



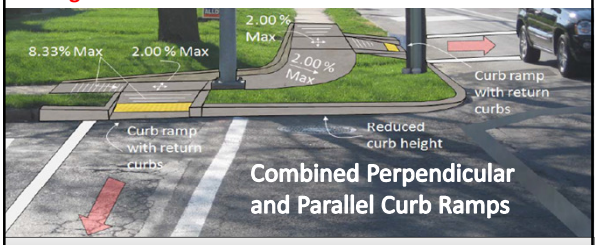
Running Slope – R304.3.2

140

The Technical Requirements . . .

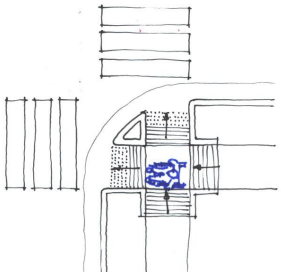
Combined Perpendicular/Parallel :

A **parallel** curb ramp is used to lower the **sidewalk to a mid-landing** and a short **perpendicular** curb ramp connects the **landing to the street**.



Curb Ramps & Blended Transitions – R304

The Technical Requirements . . .



Combined Perpendicular and Parallel Curb Ramps

Curb Ramps & Blended Transitions – R304

The Technical Requirements . . .

Blended Transitions

Blended Transitions – R304.4

143

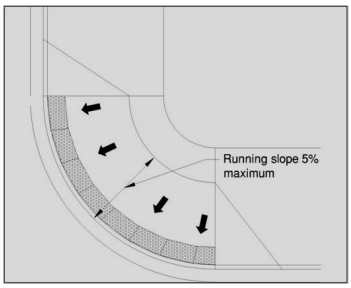
The Technical Requirements . . .

Blended Transitions:
A raised pedestrian street crossing, depressed corner, or similar connection that has a **grade ≤ 5%**

Curb Ramps & Blended Transitions – R304

The Technical Requirements . . .

Running slope of blended transitions shall be 5% max

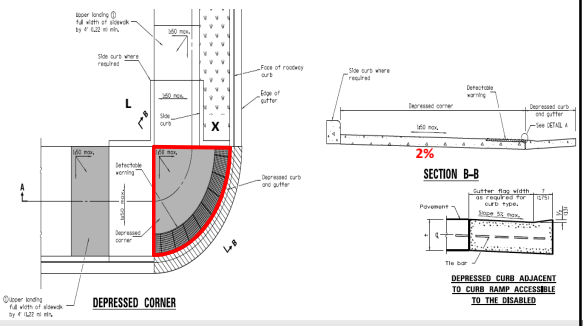


For shared use paths, width of blended transitions must be = width of shared use path

Running Slope – R304.5.1 145

The Technical Requirements . . .

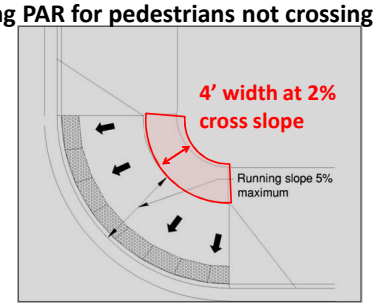
DEPRESSED CORNER RAMP IDOT STD 424021



Running Slope – R304.5.1 146

The Technical Requirements . . .

If exceeding IDOT's 2% running slope then provide a turning PAR for pedestrians not crossing road



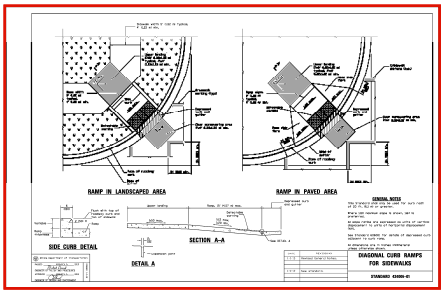
Running Slope – R304.4.1 147

The Technical Requirements . . .

Diagonal Curb Ramp – Legacy Type

Can only use if all other types are technically impractical

Primarily used on alteration projects



Curb Ramps & Blended Transitions – R304

The Technical Requirements . . .

Curb Ramps & Blended Transitions – R304

The Technical Requirements . . .

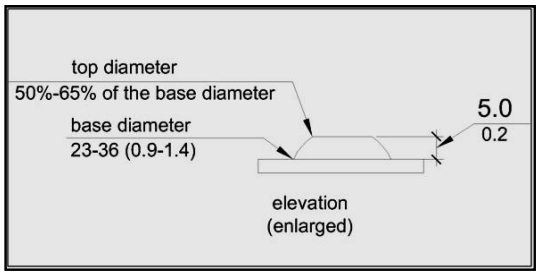
Questions

The Technical Requirements . . .

Detectable Warning Surfaces

Detectable Warning Surfaces – R305

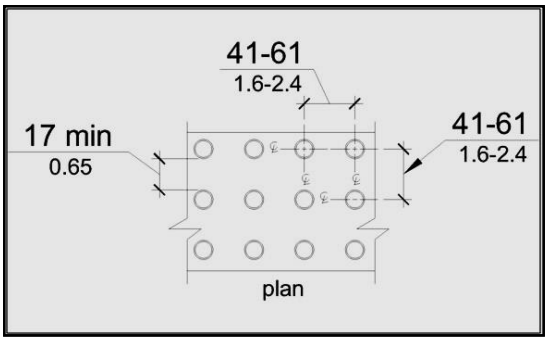
The Technical Requirements . . .



Dome Size – R305.1.1

152

The Technical Requirements . . .



Dome Spacing – R305.1.2

153

The Technical Requirements . . .

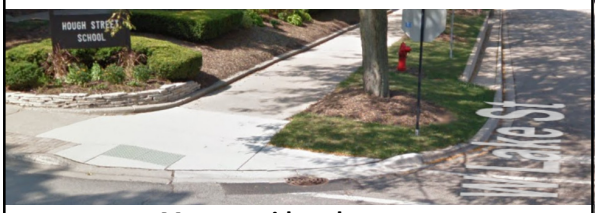
Detectable Warning Surfaces

Dome Failures

Dome Spacing – R305.1.2 154

The Technical Requirements . . .

Detectable Warning Surfaces

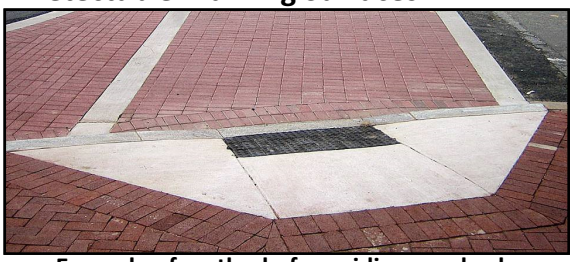


Must provide color contrast:
Light on dark or dark on light
Green DWS on concrete ARE NOT acceptable

Contrast – R305.1.3 155

The Technical Requirements . . .

Detectable Warning Surfaces



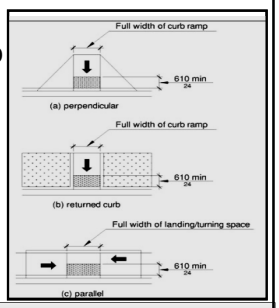
Example of method of providing good color contrast within a brick field

Contrast – R305.1.3 156

The Technical Requirements . . .

Detectable Warning Surfaces

- Extend 2‘ min on ramp
- Full width
- At the Back of Curb
- Concrete border 2”
- Properly oriented to grade break

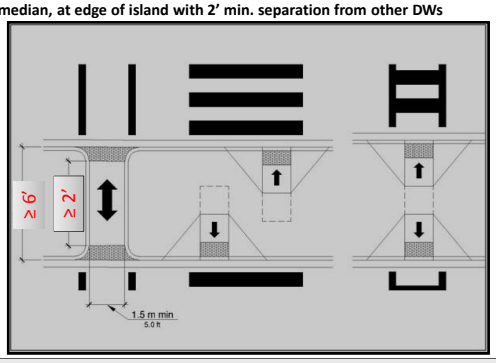


Size – R305.2

157

The Technical Requirements . . .

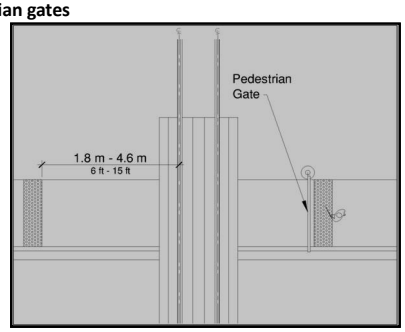
In median, at edge of island with 2’ min. separation from other DWs



Placement (Pedestrian Refuge Islands) – R305.2.4

The Technical Requirements . . .

At rail crossings, min. 6’ –max. 15’ from nearest rail and behind pedestrian gates



Placement (Pedestrian At-Grade Rail Crossings) – R305.2.5

The Technical Requirements . . .

Detectable Warnings at Driveways & Alleys

BDE 58-1.09 (c) 2. Location. ". . . Detectable warnings are also required where sidewalks cross alleys and commercial entrances where traffic control devices (e.g., yield signs, stop signs, or signals) are present."

SO……

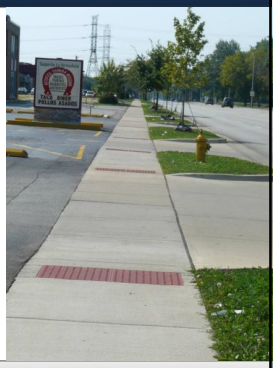
Placement – R305.2 160

The Technical Requirements . . .

Detectable Warnings at Driveways & Alleys

Place only if devices are warranted through a traffic study HOWEVER Guidance has been given to use discretion when following this:

- Too many DWs along a route can confuse those who are visually impaired.
- Some driveways with a large amount of traffic should have detectable warnings regardless of traffic control devices.



Placement – R305.2 161

The Technical Requirements . . .

INCORRECT PLACEMENT – Not full width

Placement – R305.2 162

The Technical Requirements . . .

2018 UPDATE

Detectable warnings are shown in their ideal locations but the following placement tolerances are allowed.

Side Border - Detectable warnings should extend the full width of the walking surface (excluding flared sides) but a border along each side up to 2 in. (50 mm) in width is allowed.

Curb Set-Back - Detectable warnings located at the back of curb should closely align with the curb but a gap up to 6 in. (150 mm) behind the curb is allowed.

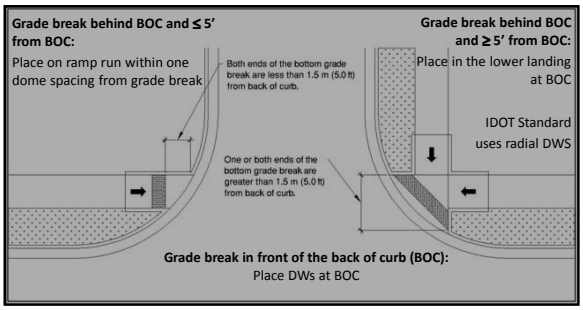
INCORRECT PLACEMENT

Exceeding BOC tolerance

Placement – R305.2

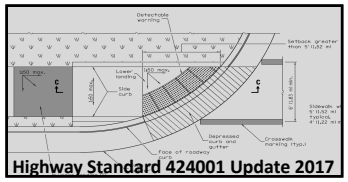
163

The Technical Requirements . . .

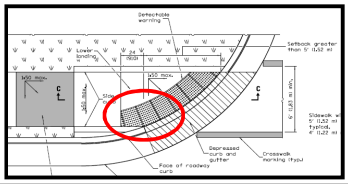


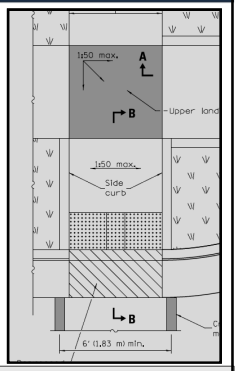
Placement (Perpendicular Curb Ramps) – R305.2

The Technical Requirements . . .



Highway Standard 424001 Update 2017

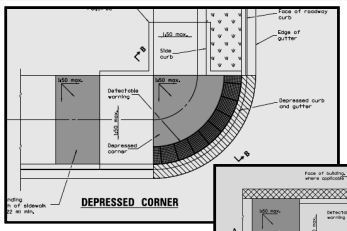




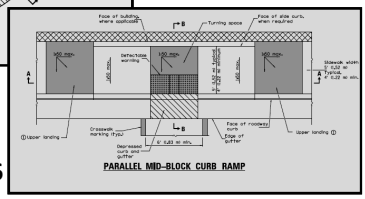
Placement – R305.2

165

The Technical Requirements . . .



Highway Standard 424021



Highway Standard 424016

Placement – R305.2

166

The Technical Requirements . . .

As of 2018 Construction Season

DETECTABLE WARNINGS (SPECIAL)

- Detectable warning tiles shall be cast iron. The color of the detectable warning tiles is to be approved by the Engineer.
- The cast iron detectable warnings shall be of uniform quality and free of surface defects.
- The detectable warnings shall meet requirements of ASTM A 48 Class 30 or better.

SIGNALIZED INTERSECTIONS w/ TIGHT RADII

- 8" PCC on the corner landing (detectable warning section) due to trucks driving over the corners

CHICAGO CONTRACTS SPECIAL PROVISION

167

The Technical Requirements . . .

Questions

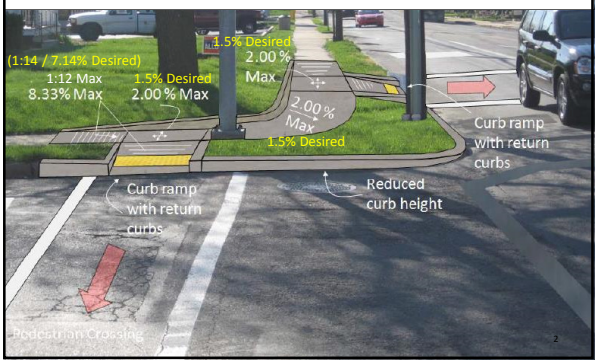
The Technical Requirements . . .

Curb Ramp Design

Pedestrian Street Crossings – R306

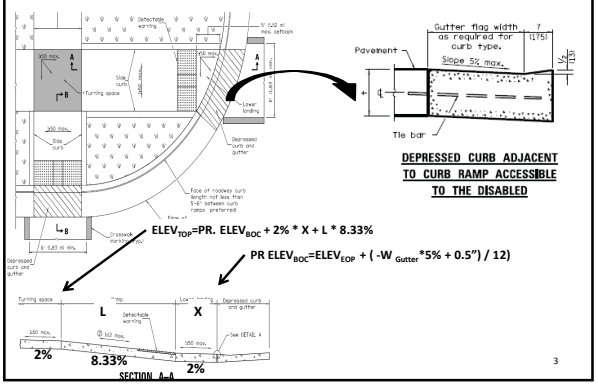
The Technical Requirements . . .

DESIGNING CURB RAMPS FOR ENGINEERING STUDIES



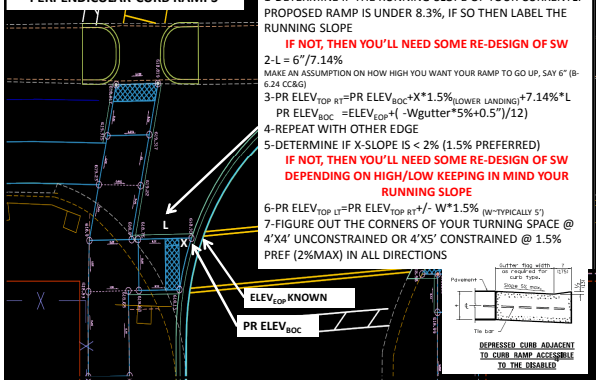
The Technical Requirements . . .

PERPENDICULAR CURB RAMPS



The Technical Requirements . . .

PERPENDICULAR CURB RAMPS



1-DETERMINE IF THE RUNNING SLOPE OF YOUR CURRENTLY PROPOSED RAMP IS UNDER 8.3%, IF SO THEN LABEL THE RUNNING SLOPE

IF NOT, THEN YOU'LL NEED SOME RE-DESIGN OF SW

2-L = 6"/7.14%

MAKE AN ASSUMPTION ON HOW HIGH YOU WANT YOUR RAMP TO GO UP, SAY 6" (B-6.24 CC&G)

3-PR ELEV$_{TOP\ RT}$=PR ELEV$_{BOC}$+X*1.5%$_{(LOWER\ LANDING)}$+7.14%*L

PR ELEV$_{BOC}$ =ELEV$_{EOP}$+(-Wgutter*5%+0.5")/12)

4-REPEAT WITH OTHER EDGE

5-DETERMINE IF X-SLOPE IS < 2% (1.5% PREFERRED)

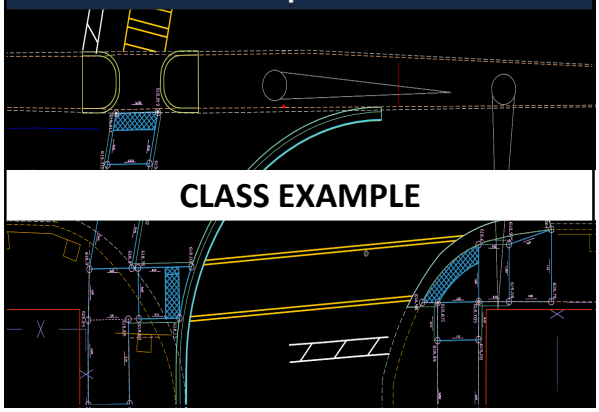
IF NOT, THEN YOU'LL NEED SOME RE-DESIGN OF SW DEPENDING ON HIGH/LOW KEEPING IN MIND YOUR RUNNING SLOPE

6-PR ELEV$_{TOP\ LT}$=PR ELEV$_{TOP\ RT}$+/- W*1.5% (W~TYPICALLY 5')

7-FIGURE OUT THE CORNERS OF YOUR TURNING SPACE @ 4'X4' UNCONSTRAINED OR 4'X5' CONSTRAINED @ 1.5% PREF (2%MAX) IN ALL DIRECTIONS

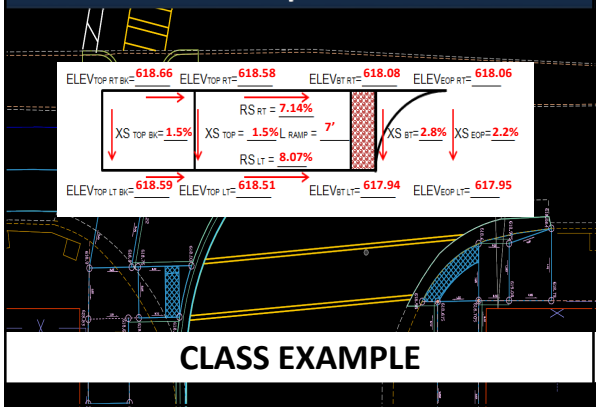
DEPRESSED CURB ADJACENT TO CURB RAMP ACCESSIBLE TO THE DISABLED

The Technical Requirements . . .



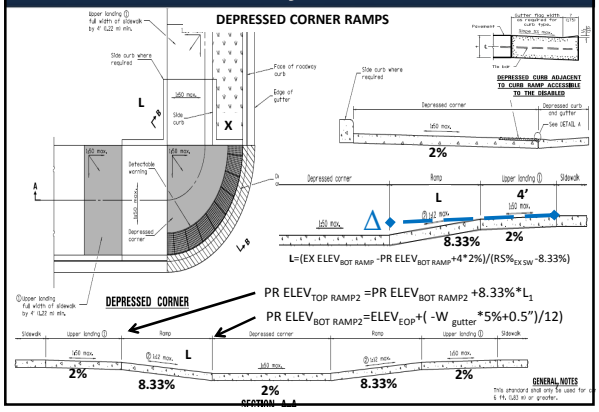
CLASS EXAMPLE

The Technical Requirements . . .



CLASS EXAMPLE

The Technical Requirements . . .



The Technical Requirements . . .

1-DETERMINE IF THE RS OF YOUR CURRENTLY PROP RAMP IS <8.3%, IF SO THEN LABEL THE RS

***IF NOT, THEN YOU'LL NEED SOME RE-DESIGN OF SW**

IN THIS CASE PERP CR WAS UNDESIRABLE (ROW, RELOCATION, SIGNAL BOX, ETC.) HENCE A DEPRESSED CURB WAS USED. EDGE OF RAMP SHOULD BE PARALLEL TO CROSSWALK

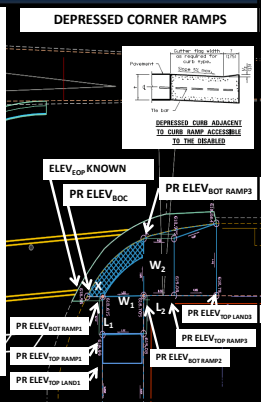
2-PR $ELEV_{BOT\ RAMP1}$=PR $ELEV_{BOC}$+X*1.5%
PR $ELEV_{BOC}$ =$ELEV_{EOP}$+(-W_{gutter}*5%+0.5")/12)

3-PR $ELEV_{TOP\ RAMP1}$ will be when the ramp profile intersects the existing profile of the SW
L_1=(EX $ELEV_{BOT\ RAMP1}$ -PR $ELEV_{BOT\ RAMP1}$+4*1.5%)/(RS%$_{EX\ SW}$ -7.14%)
PR $ELEV_{TOP\ RAMP1}$ = PR $ELEV_{BOT\ RAMP1}$ +7.14%*L_1
PR $ELEV_{TOP\ LAND1}$ = PR $ELEV_{TOP\ RAMP1}$ +1.5%*4

4-REPEAT WITH OTHER EDGE CARRYING 1.5% AT BOTTOM OF RAMP:
PR $ELEV_{BOT\ RAMP2}$=PR $ELEV_{BOT\ RAMP\ 1}$+W_1*1.5%
PR $ELEV_{TOP\ RAMP2}$ =PR $ELEV_{BOT\ RAMP2}$ +7.14%*L_1
PR $ELEV_{TOP\ LAND2}$ = PR $ELEV_{TOP\ RAMP2}$ +1.5%*4

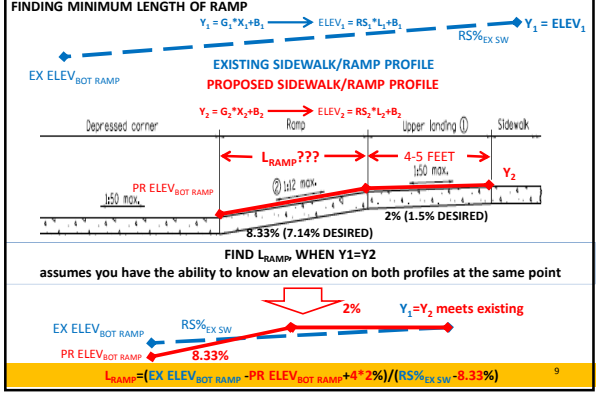
5-NEXT SIDEWALK:
L_2=(EX $ELEV_{BOT\ RAMP2}$ -PR $ELEV_{BOT\ RAMP2}$+1.5%*4')/(RS%$_{EX\ SW2}$ -7.14%)
PR $ELEV_{TOP\ RAMP3}$ = PR $ELEV_{BOT\ RAMP2}$ +7.14%*L_2
PR $ELEV_{TOP\ LAND3}$ = PR $ELEV_{TOP\ RAMP3}$ +1.5%*4

6-REPEAT WITH OTHER EDGE CARRYING 1.5% AT BOTTOM OF RAMP:
PR $ELEV_{BOT\ RAMP3}$=PR $ELEV_{BOT\ RAMP2}$-W_2*1.5%
PR $ELEV_{TOP\ RAMP4}$ =PR $ELEV_{BOT\ RAMP3}$ +7.14%*L_2
PR $ELEV_{TOP\ LAND4}$ = PR $ELEV_{TOP\ RAMP4}$ +1.5%*4



The Technical Requirements . . .

FINDING MINIMUM LENGTH OF RAMP



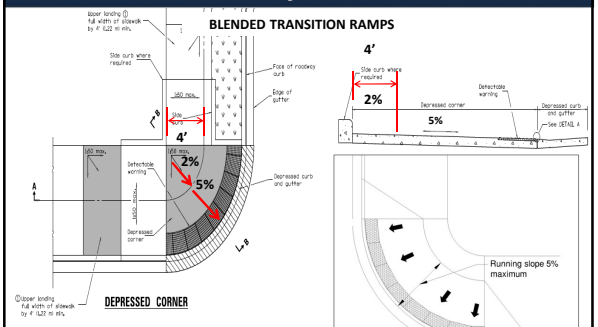
FIND L_{RAMP}, WHEN Y1=Y2

assumes you have the ability to know an elevation on both profiles at the same point

L_{RAMP}=(EX $ELEV_{BOT\ RAMP}$ -PR $ELEV_{BOT\ RAMP}$+4*2%)/(RS%$_{EX\ SW}$ -8.33%)

9

The Technical Requirements . . .



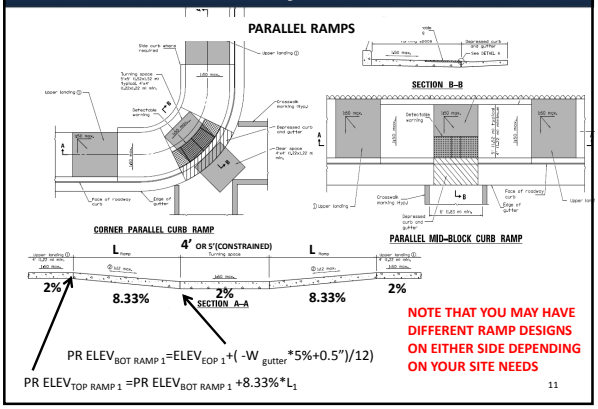
Say it's a 6" rise, the 5% area would have to be 8.4' wide for a total corner distance of 12.4'.

$\Delta y_{PAR}=2\%*4'=0.08'$; $0.5'-0.08=0.42'$ @ 5%

$\Delta x=0.42/5\%=8.4'$; add the 4' @ 2% total width of ramp=8.4+4'=12.4'

10

The Technical Requirements . . .



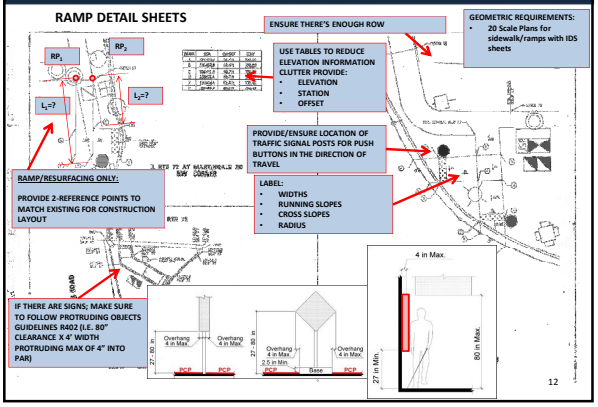
$PR\ ELEV_{BOT\ RAMP\ 1}=ELEV_{EOP\ 1}+(-W_{gutter}*5\%+0.5'')/12)$

$PR\ ELEV_{TOP\ RAMP\ 1}=PR\ ELEV_{BOT\ RAMP\ 1}+8.33\%*L_1$

NOTE THAT YOU MAY HAVE DIFFERENT RAMP DESIGNS ON EITHER SIDE DEPENDING ON YOUR SITE NEEDS

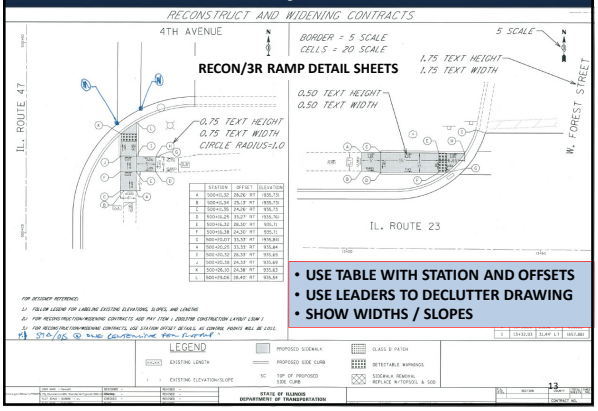
11

The Technical Requirements . . .



12

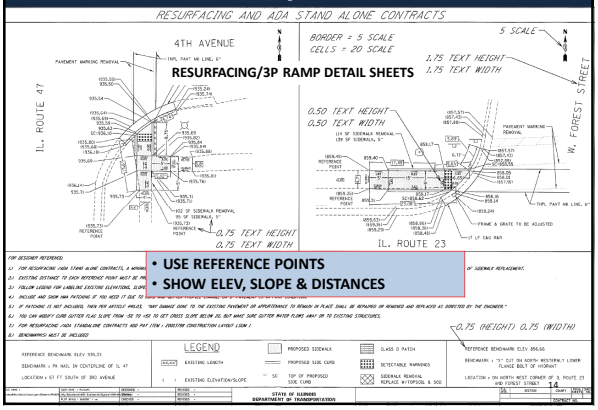
The Technical Requirements . . .



- USE TABLE WITH STATION AND OFFSETS
- USE LEADERS TO DECLUTTER DRAWING
- SHOW WIDTHS / SLOPES

13

The Technical Requirements . . .



- USE REFERENCE POINTS
- SHOW ELEV, SLOPE & DISTANCES

14

ADA Design Automation Tool

CURB RAMPS DESIGN WITH CADD (ADA Automation Tool)

15

ADA Design Automation Tool

Introduction

- Purpose: presenting a developed method/procedure helps make sidewalk design process a more efficient process
- Its not to show you how to design, rather once familiar with ADA/BDE/PROWAG design standards and guidelines, it expedites the design process by minimizing error and saving time
- Two main components to the developed method:
  - Replacement of the iterative process (use of a spreadsheet)
  - Semi-dynamic labeling (use in MicroStation)
- Expectations: a 4-6 hours design can be done in 1-2 hours

ADA Design Automation Tool

Disclaimer

- ADA Automation Tool – as the name suggest – is just a tool
  - Results are dependent on how it's used
- It assists in the design process
- The user is responsible for the results

17

ADA Design Automation Tool

Process

- Typical sidewalk detail creation:
  - Geometric layout
  - **Sidewalk design**
  - **Labeling**
  - Plan preparation

} Steps modified by new process

18

ADA Design Automation Tool

Process: expanded steps

0. Initial preparation of survey data and CADD files
1. Geometric layout
2. Point creation
3. Point extraction
4. Sidewalk design
5. Point import
6. Labeling slopes
   elevations
   dimensions

} Steps modified by new process, focus of presentation

7. Sheet preparation
8. Quantities
9. Benchmarks
10. Sheet creation

19

ADA Design Automation Tool

Summary

- Iterative process is automated (let the computer figure it out)
- Labeling is done based on designed data (minimizing chance for error & reduce time)
- Method is applicable to OpenRoads Designer (future proof)
  - A 3D model can be easily created
- ADA detail creation can be expected to take 1-2 hours (from survey data to deliverable)
  - As shown in the A to Z demonstration

20

The Technical Requirements . . .

ADA Ramp Details on Contract Plans

21

The Technical Requirements . . .

Design Guidance # 1

- Please read all of the notes in the ADA templates before beginning design.
  - ADA Quantities should be available in a schedule or called out on plans
    - Due to plan changes designers don't always include schedules in the plans so check with designer during preconstruction meeting

22

The Technical Requirements . . .

Design Guidance # 2

- Ensure ADA details are legible on an 11x17 plan sheet
  - Settings in template are for IDOT workstations
  - Adjust text size as needed

23

The Technical Requirements . . .

Design Guidance # 3

3. Request ground survey
   - Use either the roadway plan sheet (preferred) or google maps image
     - Circle corners that need ADA survey done
     - Checking GIS inventory for ADA contracts completed is mandatory
     - Many contracts resurfaced from 2009-2012 have ADA design being done by PH 1 consultants for standalone ADA contracts.

24

The Technical Requirements . . .

Design Guidance # 3

- Do not request survey for simple corners where sidewalk is replaced in kind
- These can now be constructed using a District Standard (currently in testing for 2020 for IDOT Bureau of Design contracts only)

25

The Technical Requirements . . .

Design Guidance # 3

- Clarify if corner islands or medians are to be included
- Look out for utility conflicts such as sprinklers for ADA design

26

The Technical Requirements . . .

Design Guidance #4 and #5

- Submit ESR for special waste to environmental unit
- Assume the following for 5 foot wide sidewalk
  - 1 Ramp/Corner = 150 SQ FT
  - 2 Ramps/Corner = 200 SQ FT
  - Depressed Corner = 250 SQ FT
- Earth excavation estimated at .01 Cubic Yard/1 SQ FT on flat ground with no subbase

27

The Technical Requirements . . .

Design Guidance #6

- Remember to look out for bus stops if reconfiguring ADA curb ramp
  - Coordinate with PACE for relocation of shelters

28

The Technical Requirements . . .

Design Guidance #7 and #8

- Coordinate with municipality for relocation of benches
- Maintain brick sidewalks if existing conditions have bricks
- Bricks must meet ADA/PROWAG requirements

29

The Technical Requirements . . .

Design Guidance #9 and #10

- Any push button outside of the 30”-42” vertical height requirement will require relocation at 36”
- Pave sidewalk up to push button
- If above not possible install a push button extension
- 2.5’x4’ paved clear space in front of push button
- No new ped signal posts on resurfacing contracts
- Discuss with traffic if you feel pedestrian signals are warranted at a specific location

30

The Technical Requirements . . .

Design Guidance #11

- Rebuild any existing handholes that are impacted
- Add appropriate special provisions
- If raised median being converted to striped median rebuild existing handhole to heavy duty handhole
- Will require signal maintenance transfer

31

The Technical Requirements . . .

Design Guidance #12

- Acceptable to have utilities within the curb ramp
- Detectable warning portion must be free of any utilities such as handholes, frames, or lids.

32

The Technical Requirements . . .

Design Guidance #13

24" Frames and lids to be adjusted by IDOT contractor

33

The Technical Requirements . . .

Design Guidance #13

- 6” water valve to also be adjusted by IDOT contractor
- Sanitary, gas, or any other utilities are to be adjusted by municipality or utility company
- Plans must call out location of adjustment

34

The Technical Requirements . . .

Design Guidance #14

- ADA curb ramps can be removed if there are safety concerns
  - Only remove ramps after coordination with D1 Bureau of Traffic Bike and Pedestrian Engineer and Local Agency
  - Inform D1 ADA coordinator so the ADA inventory can be updated

35

The Technical Requirements . . .

Design Guidance #15

- Resurfacing with ADA curb ramps
  - Add construction layout special pay item and spec
- No ADA on resurfacing then no construction layout special pay item required
- All other projects such as channelization with ADA will use regular construction layout pay item
- Don’t use both pay items in a contract

36

The Technical Requirements . . .

Design Guidance #16

- CDOT requires cast iron detectable warnings
  - Use detectable warning special pay item
- Landings and curb ramps are to use 8" PCC at all signalized intersections within City of Chicago

37

The Technical Requirements . . .

Design Guidance #17 and #18

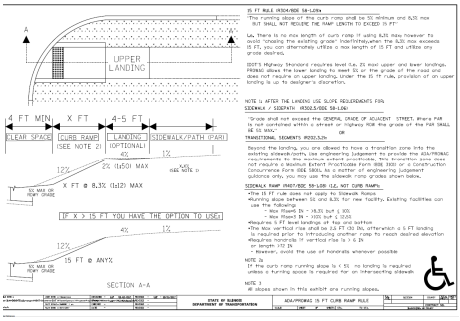
- If only ADA design element that is non-compliant is detectable warning then full ADA plan detail will not be provided
- A callout with location of improvement on plan sheet will be provided
- Resurfacing plans should indicate location of all ADA improvements

38

The Technical Requirements . . .

Design Guidance #19

Follow 15 foot rule



39

The Technical Requirements . . .

Design Guidance #20

- Design is estimating on SOQ 4 foot wide full depth patches
  - 50% of ADA corners for resurfacing contracts
  - 100% of corners on stand alone ADA contracts

40

The Technical Requirements . . .

Design Guidance #21

- Ensure water flows off sidewalk
- Note locations of inlets on reconstructions
- Remember pay item lids, type 1, open lids for any lids within the depressed curb portion of curb ramp

41

The Technical Requirements . . .

Design Guidance #22

- Add General Note

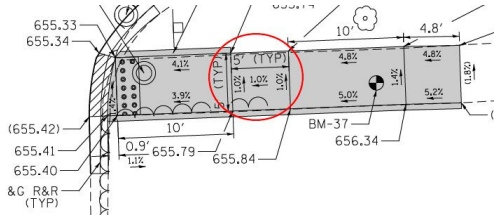
  "The contractor shall maintain pedestrian access at all times during construction"

42

The Technical Requirements . . .

Design Guidance #23

- Upper landings are preferred by IDOT highway standards, but not required per PROWAG
- Transition segment is not considered an upper landing therefore no MEP is required

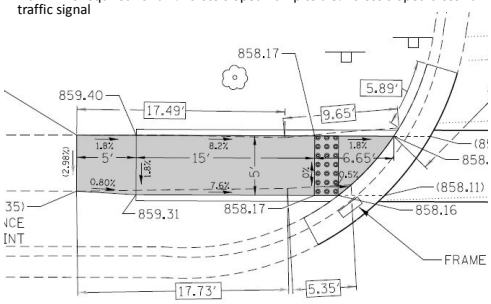


43

The Technical Requirements . . .

Design Guidance #23 and #24

- No MEP is required if the cross slope of a transition segment is greater than 2%
- No MEP is required for a 2% cross sloped ramp to a 5% cross sloped crosswalk at a traffic signal

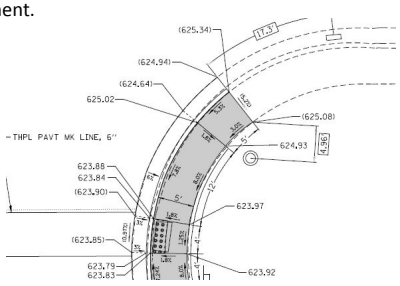


44

The Technical Requirements . . .

Design Guidance #24

- MEPs are not required on transition segments when connecting an altered compliant element to an existing element.



45

The Technical Requirements . . .

Design Guidance #25, #26 and #27

- MEPs will not be approved for alternative pedestrian routes during construction during the planning and design phase
- Generally MEPs will not be approved for reconstruction projects
- Submit MEPs to DOT.D1.ADA@illinois.gov
  2 weeks before FHWA meeting date
- All MEP paperwork must be provided to resident engineer at preconstruction meeting

46

The Technical Requirements . . .

Project Details for Curb Ramps

- IDOT D1 has a tiered approach to ADA design
- For simple corners surrounded by grass and that are remove and replace sidewalk with new grades use D1 ADA project details
- Complex designs will require detailed survey and design
- Currently in testing for 2020 – only use on IDOT led contracts (not for local agency contracts)

47

The Technical Requirements . . .

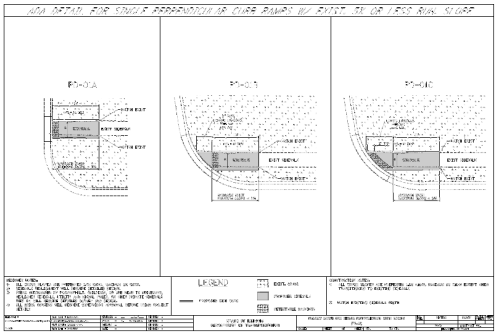
Project Details for Curb Ramps

- Cannot use standard template when curb ramp
  - Is surrounded by PCC or Asphalt
  - Has a nearby building that constraints design
  - Is near driveways that will not be modified
  - Has potential utility conflicts or signal poles that make design difficult
  - When private sidewalk is tying into proposed sidewalk
  - Sidewalk is being realigned
  - Brick corners are discouraged

48

The Technical Requirements . . .

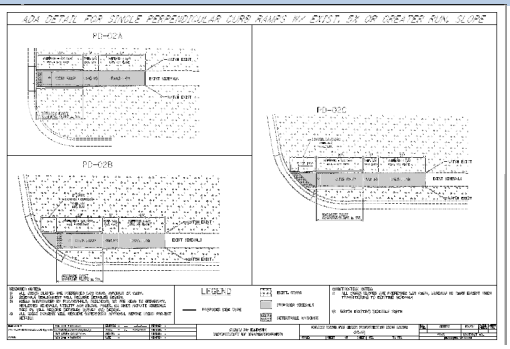
Project Details for Curb Ramps



49

The Technical Requirements . . .

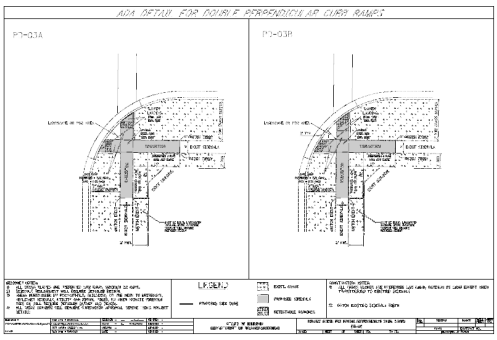
Project Details for Curb Ramps



50

The Technical Requirements . . .

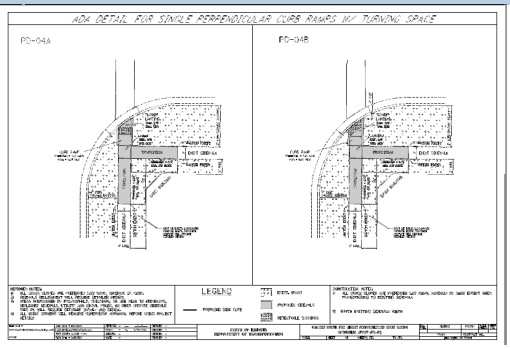
Project Details for Curb Ramps



51

The Technical Requirements . . .

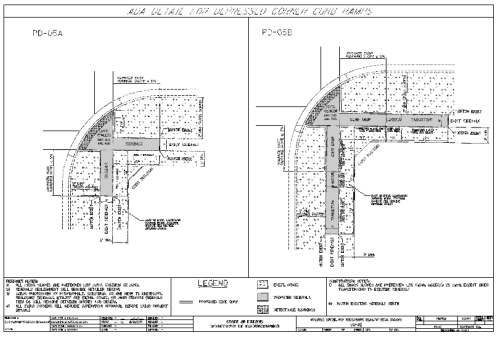
Project Details for Curb Ramps



52

The Technical Requirements . . .

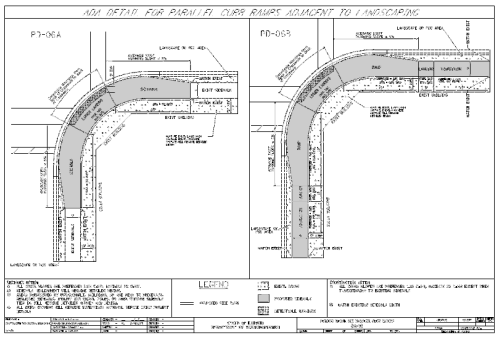
Project Details for Curb Ramps



53

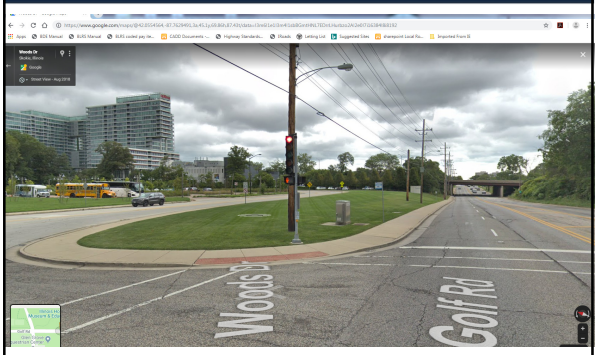
The Technical Requirements . . .

Project Details for Curb Ramps

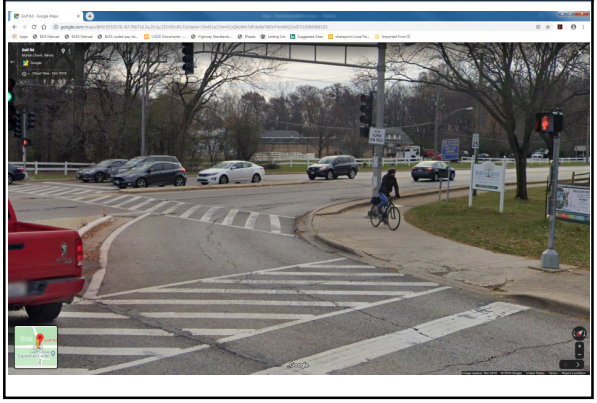


54

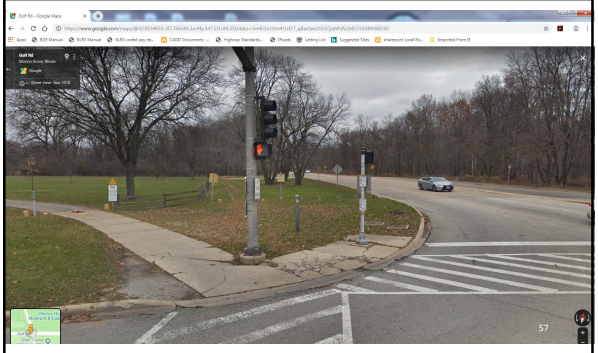
The Technical Requirements . . .



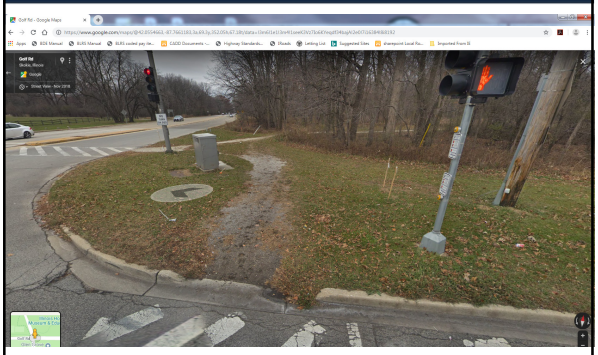
The Technical Requirements . . .



The Technical Requirements . . .

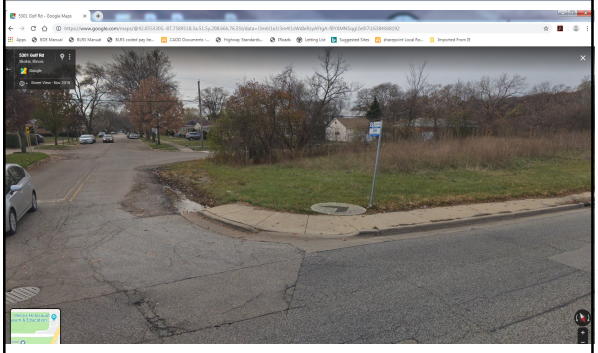


The Technical Requirements . . .

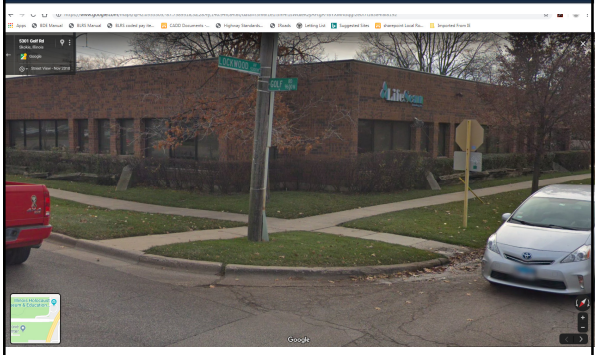


The Technical Requirements . . .

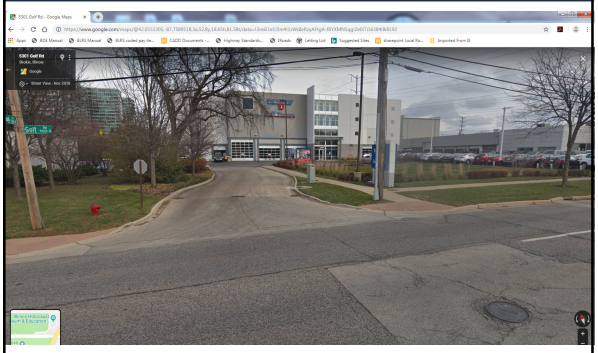
The Technical Requirements . . .



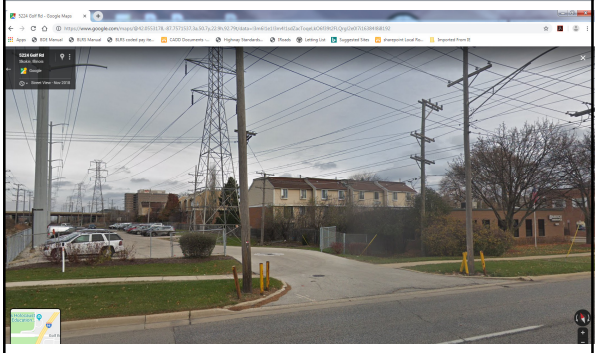
The Technical Requirements . . .



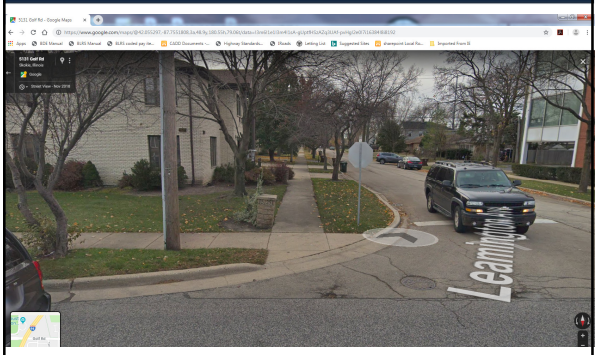
The Technical Requirements . . .



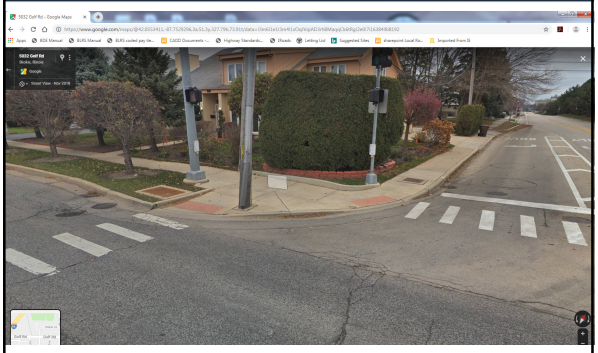
The Technical Requirements . . .



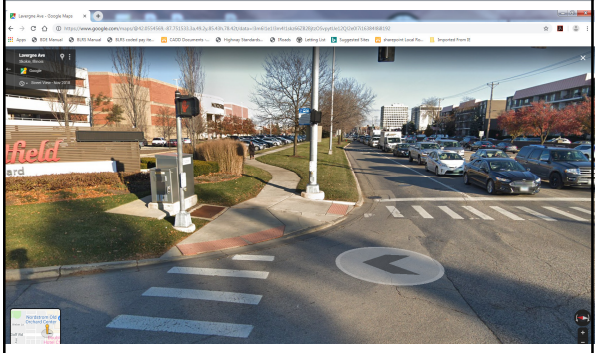
The Technical Requirements . . .



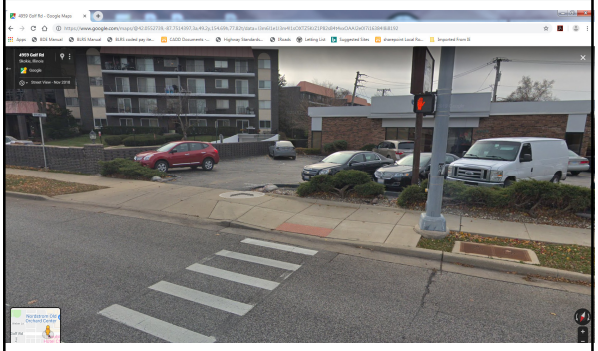
The Technical Requirements . . .



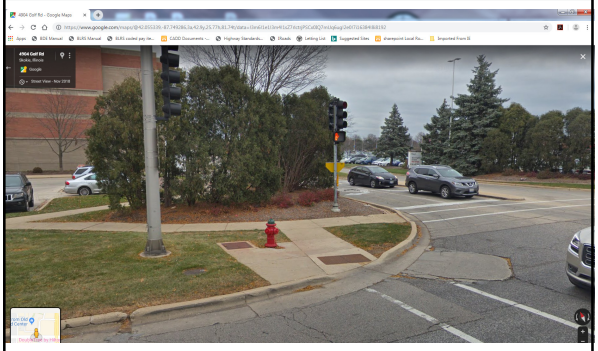
The Technical Requirements . . .



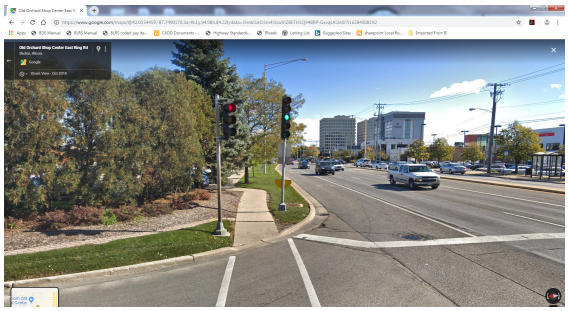
The Technical Requirements . . .



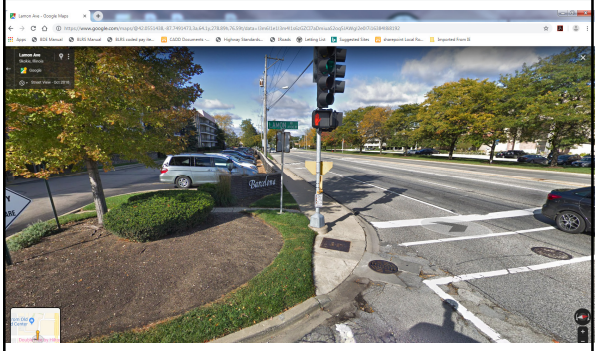
The Technical Requirements . . .



The Technical Requirements . . .

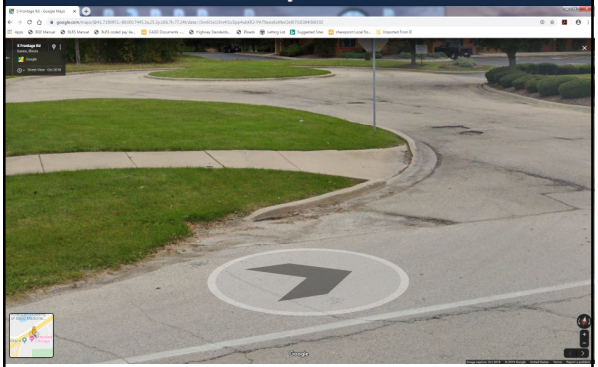


The Technical Requirements . . .

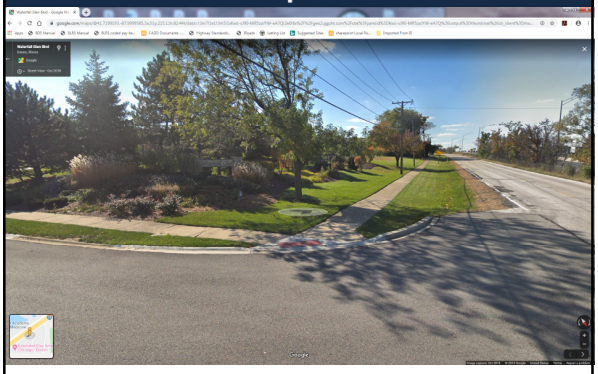


The Technical Requirements . . .

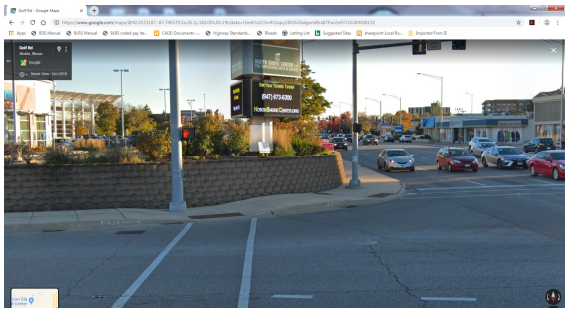
The Technical Requirements . . .



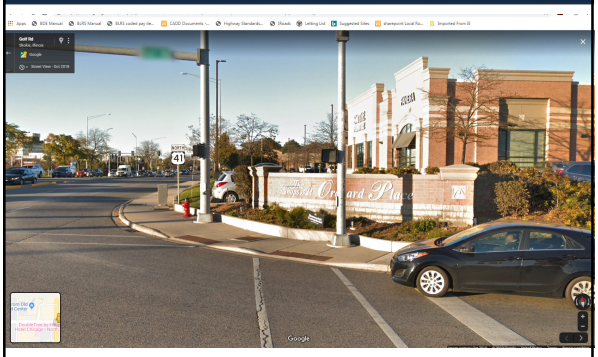
The Technical Requirements . . .



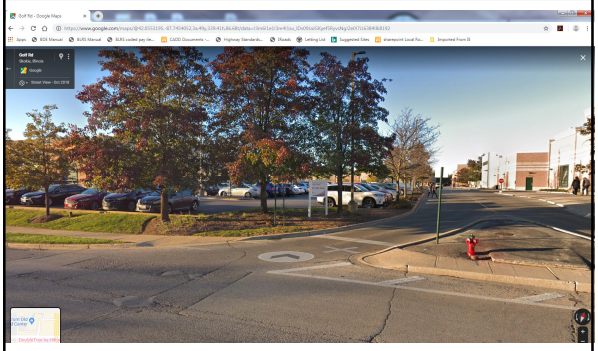
The Technical Requirements . . .



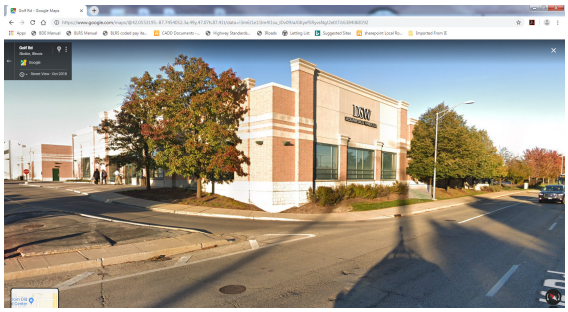
The Technical Requirements . . .



The Technical Requirements . . .

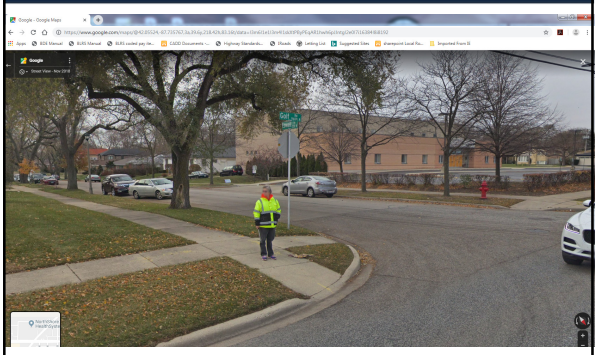


The Technical Requirements . . .

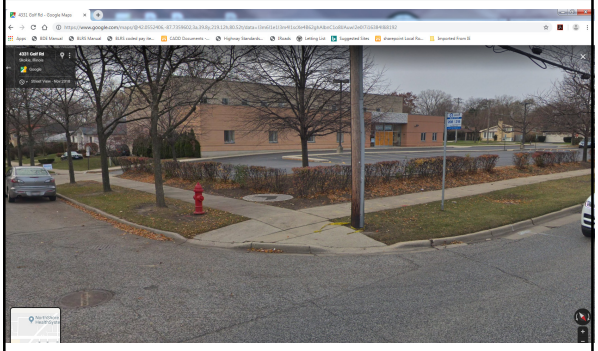


The Technical Requirements . . .

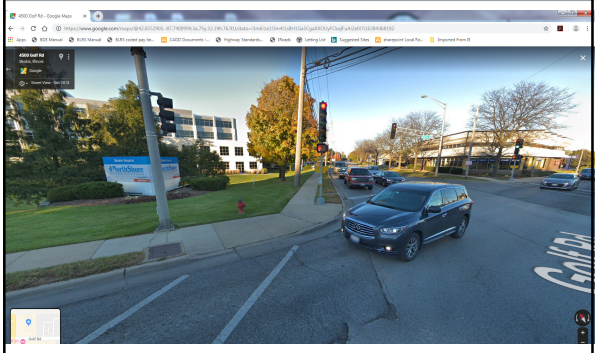
The Technical Requirements . . .



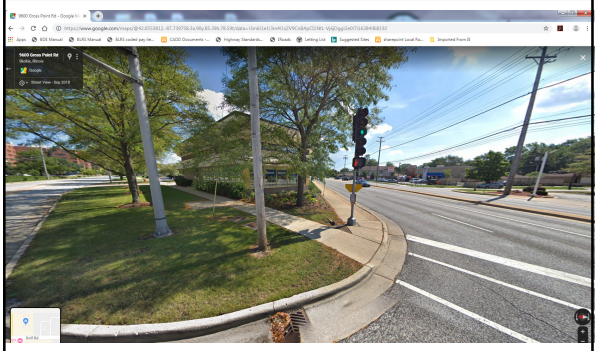
The Technical Requirements . . .



The Technical Requirements . . .

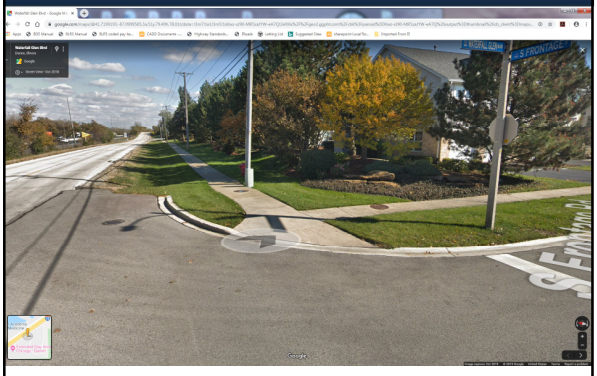


The Technical Requirements . . .



The Technical Requirements . . .

The Technical Requirements . . .



The Technical Requirements . . .

Questions

The Technical Requirements . . .

Pedestrian Street Crossings

Pedestrian Street Crossings – R306

The Technical Requirements . . .

Pedestrian Street Crossings:

PROWAG does not tell you when or how to mark the crosswalk

Instead refer to MUTCD Section 3 for guidance

Pedestrian Street Crossings – R306 87

The Technical Requirements . . .

Pedestrian Street Crossings:

At non-intersection (i.e. mid-block) locations, crosswalk markings legally establish the crosswalk.

—MUTCD Sec 3B.18 (03)

Pedestrian Street Crossings – R306 88

The Technical Requirements . . .

Pedestrian Street Crossings:

Per PROWAG R207:
Curb ramps and blended transitions **must** be wholly contained within the pedestrian street crossing

And per MUTCD Sec 3B.18 (17):
Crosswalk markings **should** be located so that the curb ramps are within the extension of the crosswalk markings

Pedestrian Street Crossings – R207 & R306

The Technical Requirements . . .

Example of ramp not contained within crosswalk

Pedestrian Street Crossings – R306 90

The Technical Requirements . . .

Pedestrian Street Crossings:

Traffic Signal/Uncontrolled

Stop/Yield Signs

mid-block crossing cross slope can be ≤ street grade

Pedestrian Street Crossings – R306 91

The Technical Requirements . . .

Pedestrian Street Crossings

Remember running requirements:

- **≤ 5% running slope for pedestrian access route**

Pedestrian Street Crossings—Running Slope

The Technical Requirements . . .

Pedestrian Street Crossings:

Signal Phase timing shall comply with Section 4E.06 of the MUTCD

(Pedestrian walking speed of ≤3.5 fps)

Pedestrian Signal Phase Timing – R306.2

The Technical Requirements . . .

Roundabouts:

Difficult Crossing for Vision Disability

R306.3.2 Pedestrian Activated Signals

Multi-lane pedestrian street crossing requires pedestrian activated signal :

- HAWK (High-Intensity Activated CrossWalK)
- RRFB (Rectangular Rapid Flashing Beacon)

Roundabouts – R306.3 94

The Technical Requirements . . .

Typical Median

Edge Treatment Examples

Roundabouts – R306.3 95

The Technical Requirements . . .

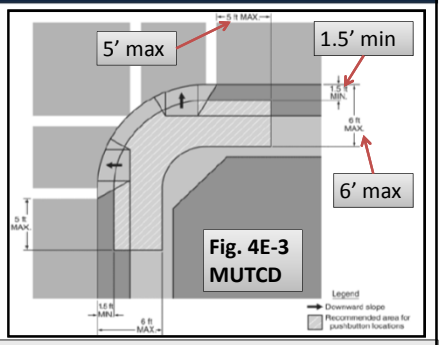
Accessible Pedestrian Signals (APS) & Pedestrian Pushbuttons

Accessible Pedestrian Signals & Pedestrian

The Technical Requirements . . .

Push Button Location

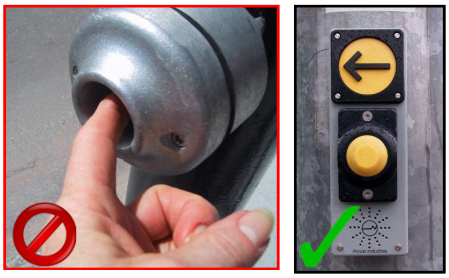
Per MUTCD 4E.08 through 4E.13



Accessible Pedestrian Signals & Pedestrian Pushbuttons– R307 & R209.1 97

The Technical Requirements . . .

Pushbutton Design



2" Dia. & operable w/ a closed fist

Max 5 lbs pressure to activate

Accessible Pedestrian Signals & Pedestrian Pushbuttons– R307 & R209.1 & R403 98

The Technical Requirements . . .

Pushbutton Design

Clear Space:
min. 2.5' (30") x min. 4' (48") but if clear space is confined…
Height:
MUTCD - 42" preferred (48" max)
IDOT Highway Standard 876001-04 - 36" preferred (30" min, 42" max)
Maneuvering Space:
For forward approach:
min. 3' (36") wide where depth exceeds 2' (24")
For parallel approach:
min. 5' (60") wide where depth exceeds 1.25' (15")

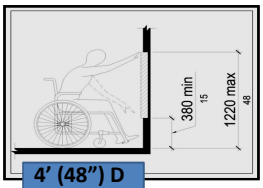
Accessible Pedestrian Signals & Pedestrian Pushbuttons– R307 & R209.1 & R403 99

The Technical Requirements . . .

Forward Approach:

Reach Ranges for Operable Parts

UNCONFINED

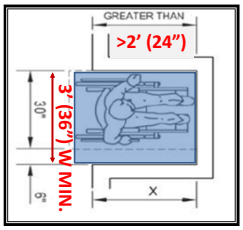


4' (48") D

Plan View

2.5' (30") W

CONFINED



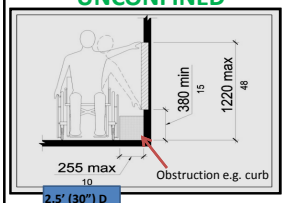
Accessible Pedestrian Signals & Pedestrian Pushbuttons– R307 & R209.1 & R406 100

The Technical Requirements . . .

Parallel Approach:

Reach Ranges for Operable Parts

UNCONFINED

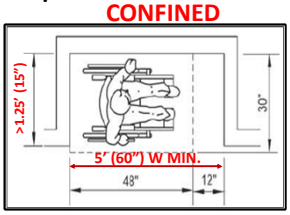


2.5' (30") D

Plan View

4' (48") W MIN.

CONFINED



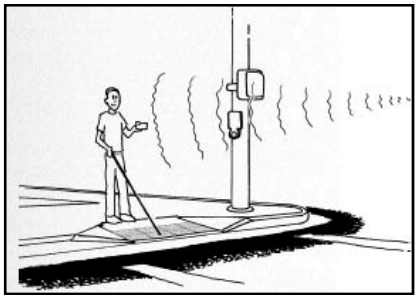
Accessible Pedestrian Signals & Pedestrian Pushbuttons– R307 & R209.1 & R406 101

The Technical Requirements . . .

Accessible Pedestrian Signals (APS)

Required,

BUT……



Accessible Pedestrian Signals & Pedestrian Pushbuttons– R307 & R209.1 102

The Technical Requirements . . .

Currently for IDOT the installation of APS & Pushbuttons depends on the following:

Is it a Local Roads Project?
Is it on a State Route?

The Technical Requirements . . .

If a Local Roads Project, follow Figure 41-6B in the BLR&S Manual

Install APS & accessible push button per MUTCD:
1) if work is done on the pedestrian signal involving the signal controller, or
2) the pedestrian signal head is replaced

However, BLRS 41-6.09 Pedestrian Street Crossings notes that if pedestrian signals are provided, they SHOULD be accessible pedestrian signals… perhaps there's some updates are needed.

The Technical Requirements . . .

If on a State Route, follow the memo from Director Osman dated July 31, 2013

Consider installation of APS per the guidance in the memo

The Technical Requirements . . .

Strongly considered if:

1. **Knowledge** of visually impaired person uses the crosswalk
2. APS is **requested** by a local agency or a person with a disability

The Technical Requirements . . .

Possibly considered if:

- High ADT on crossing street or low ADT on parallel street when peds are likely to be present
- Crosswalks across streets with speed limit > 45 mph
- Crosswalks > 120' in length
- Ped clearance time sufficient to only cross from curb/shldr to a median requiring another pushbutton there
- Traffic signals use an exclusive pedestrian phase
- Crosswalks are located in intersection with > 5 legs
- It is a midblock location with a signalized crosswalk
- Crosswalks are both not perpendicular to the crossing street and not parallel to the adjacent street

The Technical Requirements . . .

AND:

Written support of local public agency is required prior to approving the use of APS

Installation & modernization costs of APS shall be shared with the local agency & maintained per the state/local agency traffic signal agreement

The Technical Requirements . . .

APS & Pedestrian Pushbuttons– R307 & R209.1 109

The Technical Requirements . . .

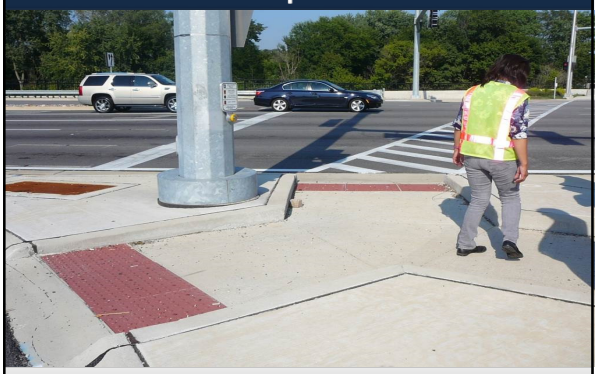
Other considerations with signals:

pole might not be compliant for location/reach

If foundation of post is too large or too far from clear space, might need to design in an extension

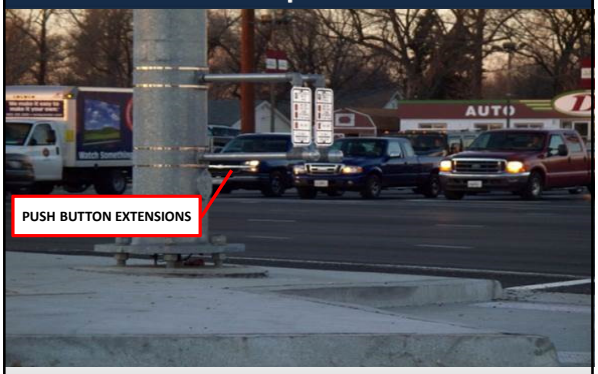
APS & Pedestrian Pushbuttons– R307 & R209.1 110

The Technical Requirements . . .



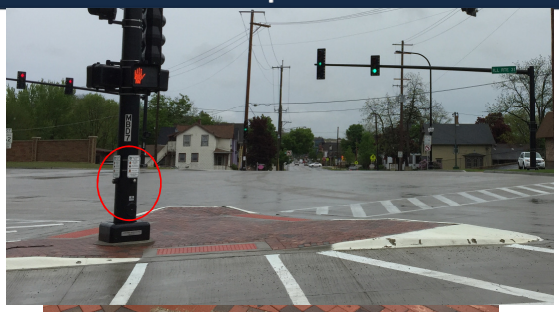
Clear Spaces—R404 111

The Technical Requirements . . .



Clear Spaces—R404

The Technical Requirements . . .



Example of poor placement

The Technical Requirements . . .

Other considerations with signals:

If replacing existing curb ramps and crossings,

Consider if the pedestrian push buttons will need to be repositioned

- **Designers** – be mindful of reach changes to ped pushbuttons when redesigning curb ramps w/ traffic signals. Include pay items for button adjustment if making non-compliant

The Technical Requirements . . .

APS Resources:

- *APS Guide at www.apsguide.org*
- *APS Guide* at www.walkinginfo.org/aps
- On Access Board site at www.access-board.gov
  - ✓ *Interfacing Audible Pedestrian Signals and Traffic Signal Controllers*
  - ✓ *Special Report: Accessible Public Rights-of-Way, Planning and Designing for Alterations* (APS locations with various types of curb ramps)
  - ✓ *APS case studies* (coming soon)
- www.accessforblind.org

APS & Pedestrian Pushbuttons– R307 115

The Technical Requirements . . .

Questions

The Technical Requirements . . .

On-Street Parking Spaces

On-Street Parking Spaces —R309 117

The Technical Requirements . . .

Standards, Guidelines, Policies

- Illinois Accessibility Code
- ADAAG (2010 Standards)
- PROWAG
- MUTCD
- BLRS/BDE Policy Manuals

The Technical Requirements . . .

Total Number of Parking Spaces	Minimum Number of Accessible Spaces	
	Off-Street (ADA)	On-Street (PROWAG)
1 to 25	1	1
26 to 50	2	2
51 to 75	3	3
76 to 100	4	4
101 to 150	5	5
151 to 200	6	6
201 to 300	7	4% of total
301 to 400	8	4% of total
401 to 500	9	4% of total
501 to 1000	2% of total	4% of total
1001 and over	20 plus 1 for each 100 over 1000	4% of total

But…..

The Technical Requirements . . .

Summary of Current Policy Application for Parking Space Requirements in Illinois

Policy	Off-street Parking	On-street Parking
BDE	ADA	ADA
BLR&S	ADA	PROWAG
IAC	ADA	NA

The Technical Requirements . . .

On-Street Parking

Determined by counting the marked or metered spaces along the perimeter of a block

Off-Street Parking

Determined by counting the spaces within off-street lots; can combine lots available for specific purpose

On-Street Parking Spaces—R309 & R214 121

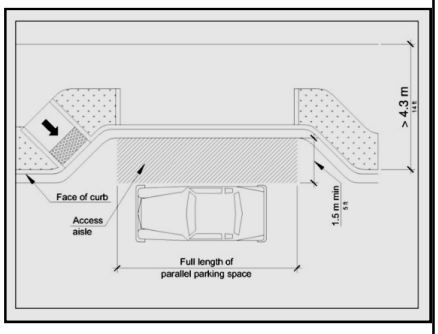
The Technical Requirements . . .

In determining requirements, cannot combine on-street parking with off-street parking

On-Street Parking Spaces—R309 & R214 122

The Technical Requirements . . .

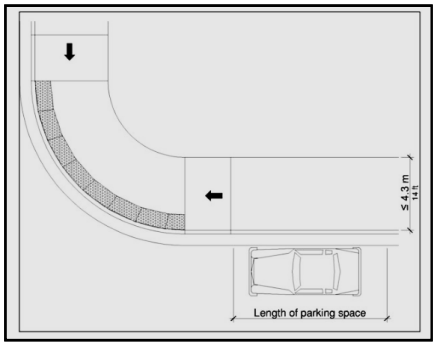
Where adjacent s/w or ROW > 14', provide min. 5' wide access aisle



Parallel Parking Spaces/Wide Sidewalks—R309.2.1

The Technical Requirements . . .

Where adjacent s/w or ROW ≤ 14', no access aisle is required. Locate space at end of block



Parallel Parking Spaces/Narrow Sidewalks—R309.2.2

The Technical Requirements . . .

<u>On-street:</u> Provide a min. 8' wide access aisle

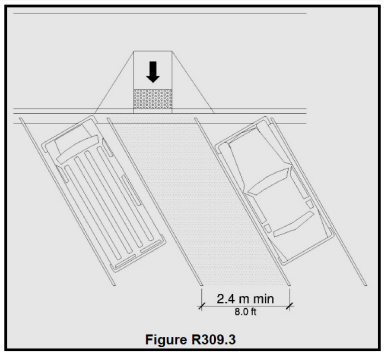


Figure R309.3

Perpendicular/Angles Parking Spaces—R309.3 125

The Technical Requirements . . .

- Connect access aisles to PAR with curb ramp or blended transition
- do not need DW if not leading to a crosswalk

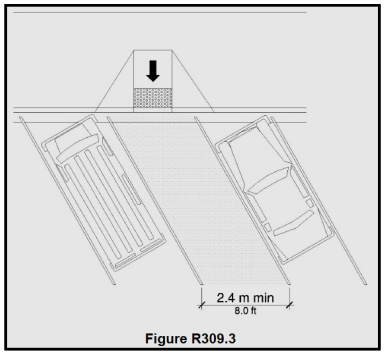


Figure R309.3

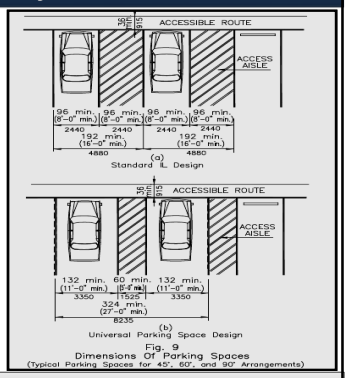
Curb Ramps or Blended Transitions—R309.4 126

The Technical Requirements . . .

Off-street
Provide 16' wide space – two spaces ~~cannot share an access aisle~~

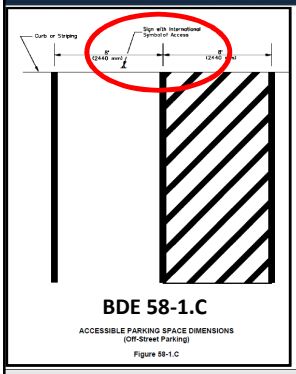
updated IAC 2018 502.3 now "shall be permitted to share common access isle"

BDE 58-1.04, BLR&S 41-6.14
Need to be updated



Off-street Parking—BDE 58-1.04(a), BLR&S, IAC 127

The Technical Requirements . . .



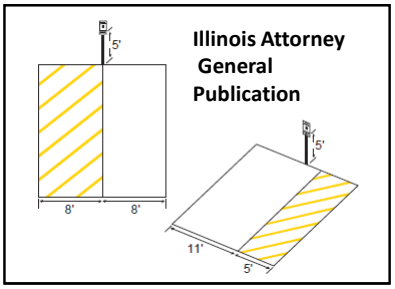
BDE 58-1.C

ACCESSIBLE PARKING SPACE DIMENSIONS
(Off-Street Parking)
Figure 58-1.C

Signs:
BDE does not indicate specific horiz. or vert. placement but does show sign on Figure 58-1.C

Parking Space Signage—BDE 58-1.C 128

The Technical Requirements . . .



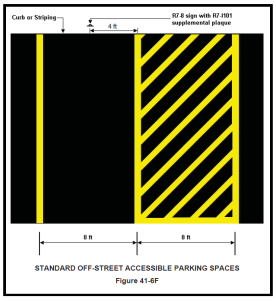
Illinois Attorney General Publication

Per AG's office, place sign in center of 16' wide space, & between 5'-9' above surface

(Note: IAC Sec. 502.6 Signs shall be vertically mounted on a post or wall at front center of the parking space, no more than 6 feet horizontally from the front of the parking space and set a minimum of 5 feet and a maximum of 9 feet from finished grade to the bottom of the R7-8 sign.

Parking Space Signage—BDE 58-1.C & IAC 129

The Technical Requirements . . .



Per BLR&S place sign 4' from edge of parking space, min. 7' above surface and no more than 2' behind face of curb

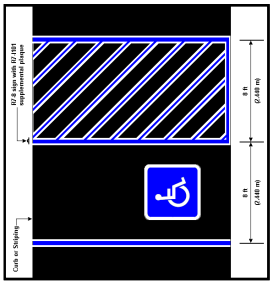
Parking Space Signage—BLR&S 41-6.13(b) 130

The Technical Requirements . . .

Parking Space Signage—Illinois Attorney General 131

The Technical Requirements . . .

On-Street Accessible Parking (MUTCD 3A.05-05)



"When used, blue markings shall supplement white markings for parking spaces for persons with disabilities"

but under:

<u>3B.20 Parking Space Markings</u>

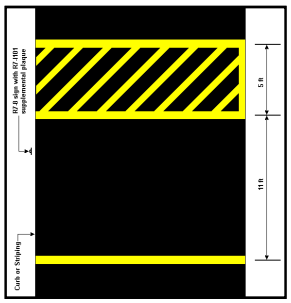
"Option:

Blue lines may supplement white parking space markings of each parking space designated for use only by persons with disabilities."

Parking Space Pavement Marking—Illinois Attorney General

The Technical Requirements . . .

Off-Street
Universal
Accessible Parking



Per IAC, a high quality yellow paint shall be used (IAC 502.3.3)

Parking Space Pavement Marking—Illinois Attorney General

The Technical Requirements . . .

Questions

The Technical Requirements . . .

Miscellaneous Other Requirements
(Transit, Utilities, Protruding Objects)

135

The Technical Requirements . . .

Transit– Boarding & Alighting Areas in the ROW

- Level, stable surface
- Clear length of 8 feet min. perpendicular to the curb/street/hwy edge
- Clear width of 5 feet min.
- Grade measured parallel to the street can equal street grade
- Grade measured perpendicular to the street ≤ 2%

The Technical Requirements . . .

Boarding & Alighting Areas in the ROW

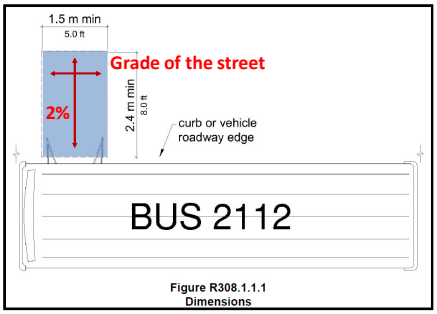


Figure R308.1.1.1
Dimensions

The Technical Requirements . . .

Boarding Platforms in the ROW

- Must be ≤ 2% in all directions
- If along street/track, slope parallel to street/track can be same as street/track grade
- Shall connect to streets/sidewalks with a PAR
- Bus shelters (PACE/CTA) for curbs 6" and lower do not require DWS. Curbs >6" considered a platform and require them to be installed.

The Technical Requirements . . .

Transit Shelters in the ROW

- **Must connect to boarding area with a PAR**
- **Clear space required entirely in shelter :**
  - ✓ **At one end of the seat or**
  - ✓ **Not within 1.5' of front of the seat**
- **Meet protruding objects requirements**
- **Environmental controls must be proximity actuated**

Transit Stops and Transit Shelters—R308 139

The Technical Requirements . . .

Transit Shelters in the ROW

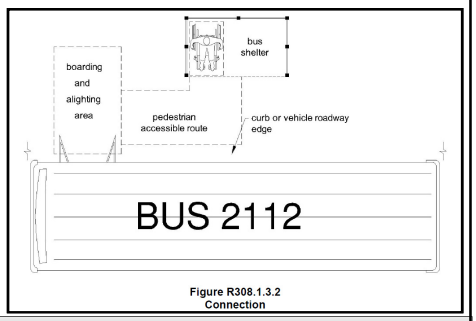


Figure R308.1.3.2
Connection

Transit Stops and Transit Shelters—R308 140

The Technical Requirements . . .

Carriage Walks

Do they need to meet PROWAG?

- If they do not lead to a crosswalk, **NO**; however, it should meet the width and cross slope requirements and end at the back of curb without a Curb Ramp as they are not intended to transport pedestrians from the sidewalk to the street but rather a vehicle similar to Bus Stops/Shelters.
- If they lead to a crosswalk, then it's intended as a curb ramp, **YES**. Introduce curb ramps in that case.

Carriage Walks 141

The Technical Requirements . . .

Raised Shoulders/Path (barrier/mountable)

Do the shoulders need to meet PROWAG?

- If the shoulders are intended as the pedestrian accommodation, YES.
  - A good indicator in the absence of local agency coordination is if they have **ramps at the corner street crossings**.
  - We strongly encourage **coordination with the local agency** to make a determination if time allows.
- If no ramps exist, they are not required to meet PROWAG.
- Cycle tracks would require meeting bike requirements

Raised Shoulders/Paths 142

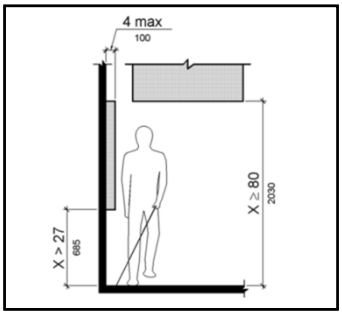
The Technical Requirements . . .

Can utilities be placed in the PAR or the ramp?

Yes, but if possible try to relocate

Utilities 143

The Technical Requirements . . .



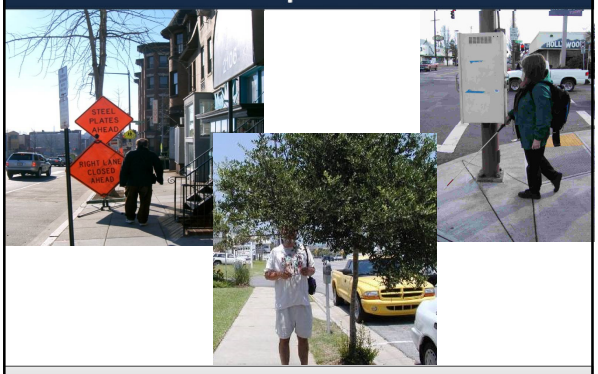
27” < Objects ≤ 80”

4” maximum protrusion

Applies to entire pedestrian circulation path

Protruding Objects—R402 (BDE 58-1.06) 144

The Technical Requirements . . .

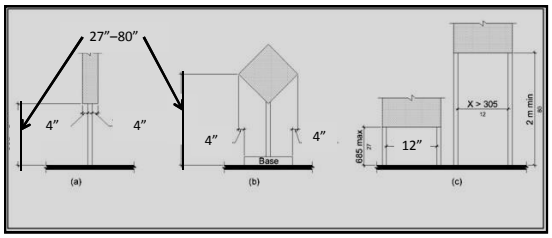


Protruding Objects—R402 (BDE 58-1.06)

145

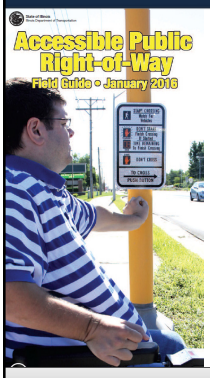
The Technical Requirements . . .

27” < Objects ≤ 80”



Post Mounted Objects—R402 (BDE 58-1.06)

The Technical Requirements . . .



ADA Field Guide
www.idot.illinois.gov/home/pedestrian
Construction Guidance Tab

Public Rights-of-Way Accessibility Guidelines (PROWAG) 2011
https://www.access-board.gov/guidelines-and-standards/streets-sidewalks

Illinois Accessibility Code 2018
https://www2.illinois.gov/cdb/announcements/2018/Documents/Register%20Page.pdf

Reminder

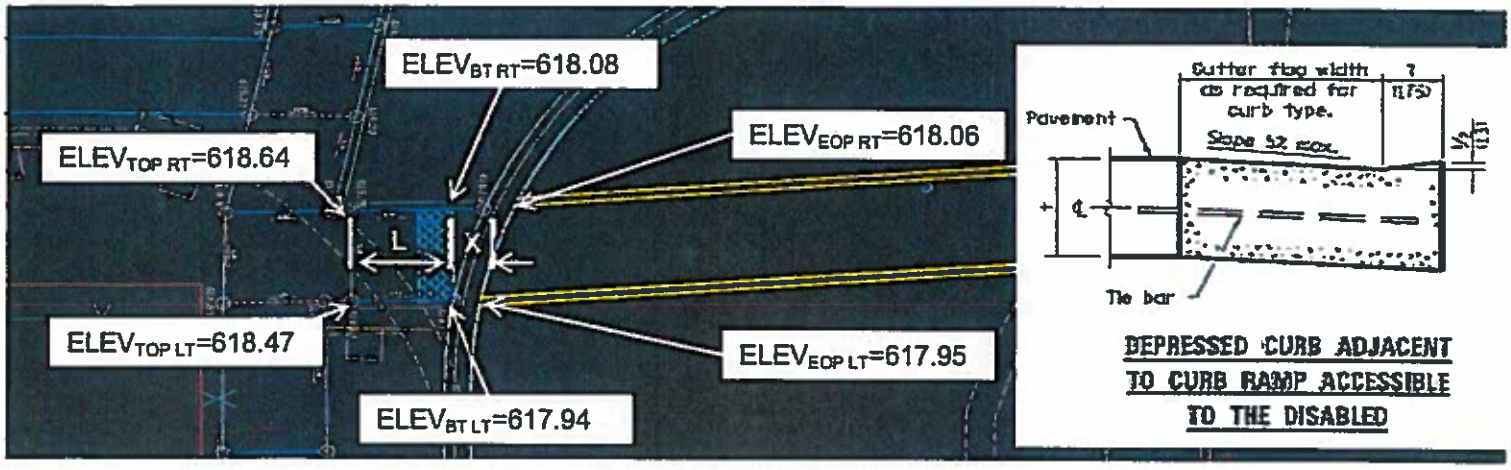
The Technical Requirements . . .

THANK YOU FOR YOUR TIME

DOT.D1.ADA@Illinois.gov

Questions

ADA/PROWAG CLASS PROBLEM



1-DETERMINE IF THE RUNNING SLOPE OF YOUR CURRENTLY PROPOSED RAMP IS UNDER 8.3%, IF SO THEN LABEL THE RUNNING SLOPE

L_{RAMP} = 5.88' X_{RT} = 2' X_{LT} = 0'

RS $_{RT\ PR\text{-}1}$= 9.52 % (618.64 − 618.08)/5.88' x100

RS $_{LT\ PR\text{-}1}$= 9.01 % (618.47 − 617.94)/5.88' x100

(CIRCLE ONE) – MEETS / DOES NOT MEET THE 8.3% MAX RUNNING SLOPE?

2-DETERMINE YOUR DESIGN RAMP LENGTH:

L = ? / 7.14%

MAKE AN ASSUMPTION ON HOW HIGH YOU WANT YOUR RAMP TO GO UP, SAY 6" (B-6.12 CC&G)

L= 7' feet

3-DETERMINE THE TOP RT ELEVATION USING A B-6.12 CC&G

$$\text{PR ELEV}_{BOC} = \text{EX. ELEV}_{EOP} + (-W_{GUTTER} * 5\% + 0.5") / 12)$$

$$\text{PR ELEV}_{TOP\ RT} = \text{PR ELEV}_{BOC} + X * 1.5\%_{(LOWER\ LANDING)} + 7.14\% * L$$

PR ELEV$_{BOC\ RT}$ = 618.06 + (- 12" * 5% + 0.5") / 12)

0.60

PR ELEV$_{BOC\ RT}$ = 618.05

PR ELEV$_{TOP\ RT}$ = 618.05 + 2' * 1.5%$_{(LOWER\ LANDING)}$ + 7.14% * 7'

0.03 0.50

PR ELEV$_{TOP\ RT}$ = 618.58

ADA/PROWAG CLASS PROBLEM

4-REPEAT WITH OTHER EDGE

PR ELEV$_{BOC\ LT}$ = 617.95 + (- 12" * 5% + 0.5") / 12)

PR ELEV$_{BOC\ LT}$ = 617.94'

PR ELEV$_{TOP\ LT}$ = 617.94 + 0 * 1.5%$_{(LOWER\ LANDING)}$ + 7.14% * 7

PR ELEV$_{TOP\ LT}$ = 618.44'

5-DETERMINE IF X-SLOPE IS < 2% (1.5% PREFERRED) ASSUMING A 5-FOOT SIDEWALK AND THE SIDESTREET HAS NO YIELD/STOP CONTROL

IF NOT, THEN YOU'LL NEED SOME RE-DESIGN OF SW DEPENDING ON HIGH/LOW KEEPING IN MIND YOUR RUNNING SLOPE

PR ELEV$_{BT\ LT}$=617.94' PR ELEV$_{BT\ RT}$=618.08'

XS $_{BOTTOM\ GRADE\ BREAK}$ = 2.8 % (CIRCLE ONE) - MEETS / DOES NOT MEET THE MAX CROSS SLOPE $< 5.0\%$

XS $_{TOP\ GRADE\ BREAK}$ = 2.8 % (CIRCLE ONE) - MEETS / DOES NOT MEET THE MAX CROSS SLOPE $> 2.0\%$

$(618.08 - 617.94) / 5' \times 100$

$(618.58 - 618.44) / 5' \times 100$

6-SAY IT WAS NOT COMPLIANT THEN RE-DESIGN TO HAVE MAX 1.5% XS:

PR ELEV$_{TOP\ LT}$=PR ELEV$_{TOP\ RT}$+/- W*1.5% (W-TYPICALLY 5')

PR ELEV$_{TOP\ LT}$=618.58 +/- 5'*1.5% (W-TYPICALLY 5')

PR ELEV$_{TOP\ LT}$= 619.51 → RS = (618.51 - 617.94) / 7' x 100 → RS = 8.14% < 8.33% OK

(CIRCLE ONE) - DID YOU ADD OR SUBTRACT THE SLOPE? WHY

IF YOU ADD (I.E. RAISE ELEVATION) YOUR ELEV$_{TOP\ LT}$ = 618.66' WHICH RESULTS IN A RUNNING SLOPE OF:

(618.66 - 617.94) / 7 X 100 = 10.29 % > 8.33 % → DOES NOT MEET

7-FIGURE OUT THE CORNERS OF YOUR TURNING SPACE:
SELECT YOUR TOP LANDING DIMENSIONS @ 1.5% PREF (2%MAX) IN ALL DIRECTIONS
(SELECT ONE)

- ___4'X4'
- ___4'X5'
- X 5'X5' → ADJACENT SIDEWALK WOULD ALSO BE DESIGNED TO 5' WIDTH POLICY.

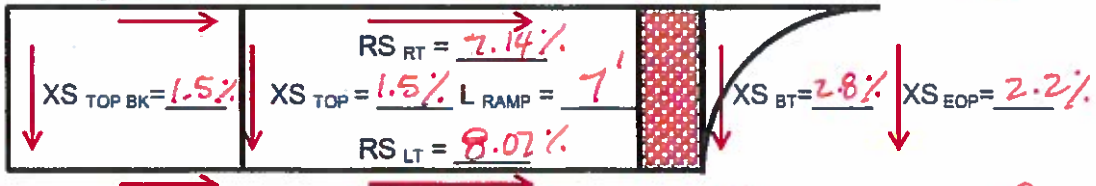
(CIRCLE ONE) - IS THE UPPER LANDING CONTRAINED OR UN-CONSTRAINED?

PR ELEV$_{TOP\ RT\ BK}$= 618.58 + 5' *1.5%
PR ELEV$_{TOP\ RT\ BK}$= 618.66
PR ELEV$_{TOP\ LT\ BK}$= 618.51 + 5' *1.5%
PR ELEV$_{TOP\ LT\ BK}$= 618.59

ADDING OR SUBTRACTING WILL DEPEND ON YOUR ADJACENT SIDEWALK DESIGN/NEEDS

7-FINAL DESIGN:

ELEV$_{TOP\ RT\ BK}$= 618.66 ELEV$_{TOP\ RT}$= 618.58 ELEV$_{BT\ RT}$= 618.08 ELEV$_{EOP\ RT}$= 618.06



ELEV$_{TOP\ LT\ BK}$= 618.59 ELEV$_{TOP\ LT}$= 618.51 ELEV$_{BT\ LT}$= 617.94 ELEV$_{EOP\ LT}$= 617.95

Illinois Department of Transportation

ADA Construction Concurrence

For pedestrian facilities that cannot be constructed fully compliant and for which there is no approved BDE 3101 ADA Statement of Maximum Extent Practicable, check off area(s) of non-compliance, discuss barriers to compliance and proposed construction to achieve ADA compliance to the maximum extent practicable. Return the form to the district ADA coordinator for concurrence on proposed construction.

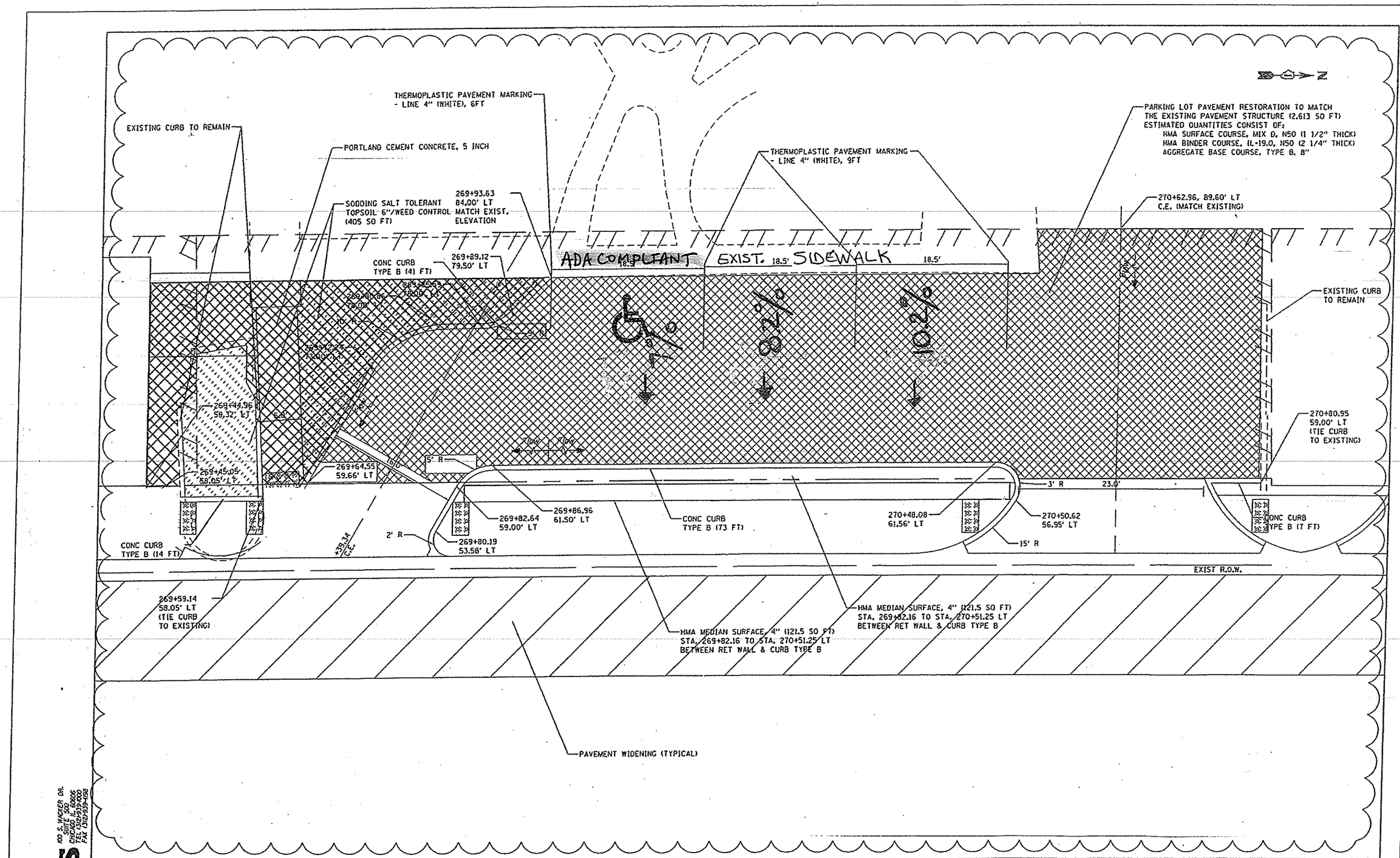
Job Number	Contract Number
C-91-145-11	60M61
Route	**Section**
FAP 330	103R-4
Intersection/Station	**Quadrant**
Sta. 270+00 Lt.	West side of US 45 (LaGrange Road)

- ☐ Curb ramp running slope
- ☐ Curb ramp width
- ☐ Landing/turning space dimensions
- ☐ Truncated dome orientation
- ☐ Pedestrian push button reach range
- ☐ Curb ramp cross slope
- ☐ Gutter counter slope
- ☐ Landing/turning space cross slope
- ☐ Grade break orientation
- ☒ Other

Discussion of barrier(s) to full ADA compliance and proposed maximum extent practicable design

IDOT purchased ROW and Temporary Easement to widen and reconstruct US 45. As a part of the land acquisition agreement, IDOT will restore Rich Realty's parking lot. See attached detailing the slopes in the parking lot at Rich Realty located on the west side of US 45 (LaGrange Road) between 143rd Street and 144th Place in Orland Park, IL. The plans call for an ADA accessible space but due to the existing grades and minimal distance between the commercial building and State ROW, the accessible parallel parking space is not ADA compliant. There is a 5 foot sidewalk running along the parking lot that is ADA compliant. We have explored moving the accessible parking to the middle of the three stalls, however doing so will not achieve the desired parking lot cross slopes. Please confirm that the accessible parking space can be designated as shown in the plans at a slope greater than 2% with an accessible ADA compliant sidewalk adjacent to the parking space.

Resident Engineer/Technician	Date submitted
	07/30/16
District ADA Coordinator	**Date concurred**



URS
100 S. WACKER DR.
SUITE 500
CHICAGO, IL 60606
TEL (312) 939-6000
FAX (312) 939-4198

FILE NAME = DIGRAM-SHT-PLNPRF17A.dgn	USER NAME = Christopher.Gassoweh	DESIGNED -	REVISED - 10/09/2014	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
		DRAWN -	REVISED -	
	PLOT SCALE = 10.4000 ' / in.	CHECKED -	REVISED -	
SHT_PLAN	PLOT DATE = 10/9/2014	DATE - 03/13/2013	REVISED -	

PROPOSED PLAN AND PROFILE – US 45 (LAGRANGE ROAD)

SCALE: | SHEET OF SHEETS | STA. TO STA.

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
330	103R-4	COOK	877	68A
		CONTRACT NO. 60M61		
		ILLINOIS FED. AID PROJECT		

Illinois Department of Transportation

ADA Statement of Maximum Extent Practicable

Route	Street	Marked	Contract #	State Job #
FAU 3730	Halsted Street	IL 1	60T20	P-91-228-11

Section	County	Municipality
3262N-1	Cook	Harvey/Phoenix

Project Limits

at Vincennes Road

Project Length

0.52 mile

Estimate of Cost	Type of Project (e.g. SMART, 3R, Reconstruction)
$6,900.00	3R

Brief Project Description

Channelization/Traffic Signal Modernization/Drainage

DOCUMENTATION OF MAXIMUM EXTENT PRACTICABLE (MEP)

Location(s) where MEP is Requested

Halsted St. (Sta. 46+73, Rt . Side), Halsted St. (Sta. 49+11, Rt . Side)

Design Element for which MEP is Requested and Proposed Design Value

Cross slope of the lower landing varies from 5.0% to 10.6%.

Design Element Policy Value	Coordination Meeting Date	Prepared By	Date
Maximum cross slope of lower landing is 2%.	06/15/2016	Farhan Tariq (IDOT, D1-Design)	05/31/2016

Specify and Explain Reason(s) why Full Compliance is Infeasible

☐ Structural (e.g. bridge beams, buildings, basements, foundations)

☐ Historic Preservation (e.g. historic buildings, districts, monuments)

☒ Topography (e.g. steep existing road grade exceeds ADA compliant maximum)

See Attachment A

☐ Utilities (Project scope would not otherwise require utility relocation)

☐ Right-of-Way (Project scope would not otherwise require R.O.W)

☐ Other

Discuss Alternatives Considered (Attach supporting documentation, e.g. plan and profile sheets, photos)

See Attachment A

APPROVAL/DISAPPROVAL

BDE Approval Date	BDE Disapproval Date

BDE Comments on Disapproval

ADA Maximum Extent Practicable
Attachment A

Description of Situation:

For Halsted St. (Sta. 46+73, Rt. Side), which is located in the portion of the project that is to be resurfaced only, by installing ADA compliant depressed curb and gutter and with the existing sidewalk restricted on the east side due to the adjacent property, the proposed cross slope exceeds the maximum value of 2.0% as mentioned in section R304.5.3 of the Proposed Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way (PROWAG).

The curb ramps at Halsted St. (Sta. 49+11, Rt. Side) are located next to a driveway that has a cross slope that is greater than 2%. With this area being in the portion of the project that is to be resurfaced only, the elevations at the edge of pavement and back of the driveway are fixed resulting in the proposed cross slope exceeding the maximum value of 2.0% as mentioned in section R304.5.3 of the Proposed Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way (PROWAG).

Approval of an ADA Statement of Maximum Extent Practicable (MEP) is requested for the cross slope of the lower landing.

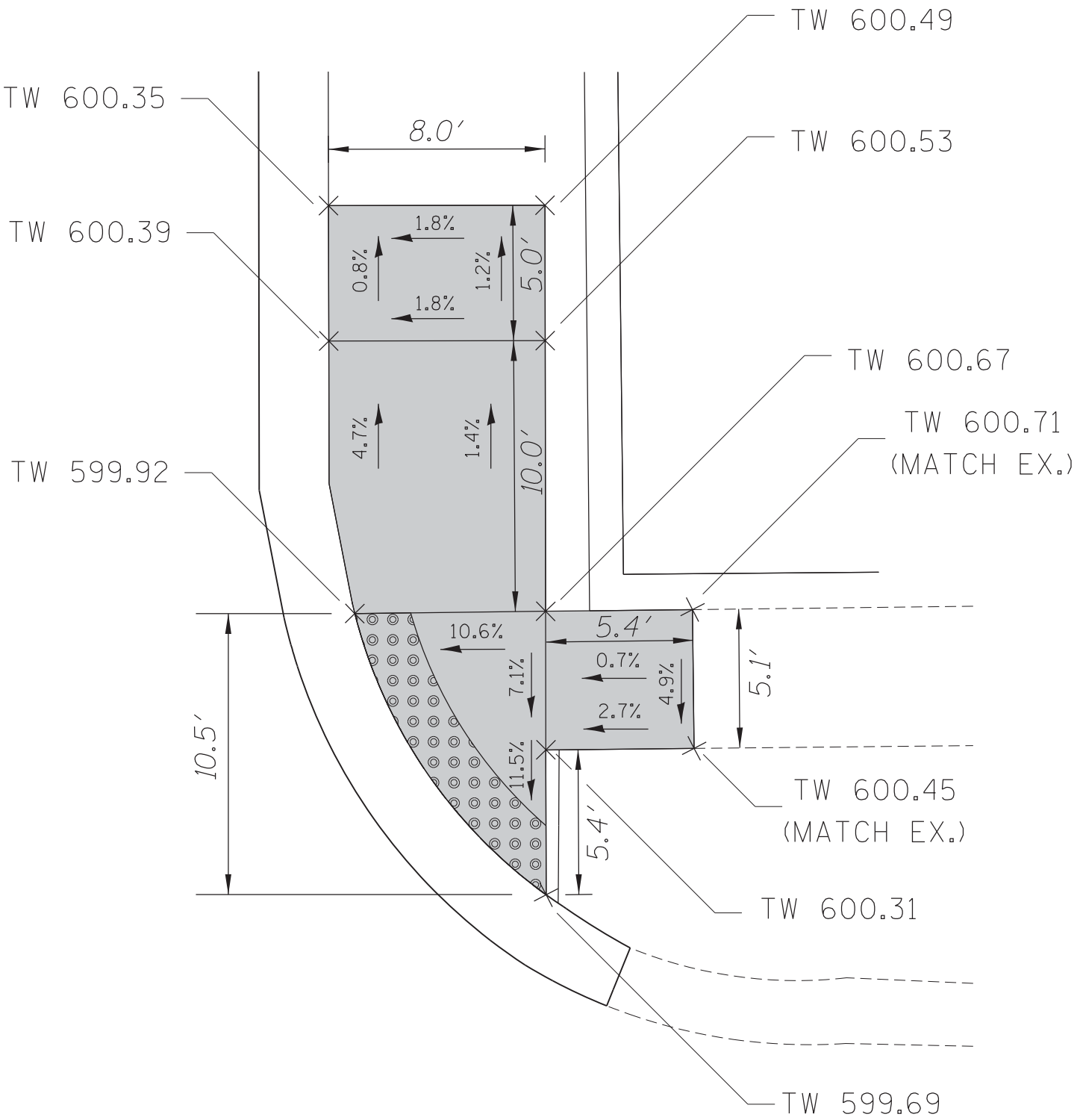
Alternatives Considered:

1. For Halsted St. (Sta. 46+73, Rt. Side), the option to lower the east sidewalk was considered. This option was not selected because this would require constructing additional stairs leading to the adjacent property which would be outside the scope of project.
2. For Halsted St. (Sta. 49+11, Rt. Side), consideration was given to provide a 4' section of sidewalk that would meet cross slope requirements through the driveway (thereby effecting the ramps as well); however, this was not selected because the shared-use path in this section must be 8' wide and this change would also result in the driveway exceeding commercial driveway grade requirements.

Benefits of Proposed Design:

The proposed design effectively takes into account other factors affecting the project such as adequate roadway cross slope, driveway grade and drainage, while minimizing non-compliance of ADA requirements.

HALSTED ST.
STA. 46+73, RT. SIDE



Halsted St. (Sta. 46+73, Rt. Side)

Illinois Department of Transportation

Memorandum

To: All Designers

From: Ken Eng

Subject: ADA Ramp Details for Contract Plans

Date: January 10, 2018

In order to comply with the Department's Policy for American with Disabilities Act (ADA) ramp construction within the project limits, all contract plans with ADA ramps will require project specific ADA ramp construction details for the contractor. This will apply to all projects (resurfacings, pavement widenings, bridges, and reconstructions) that has existing or will have proposed accommodations for ADA.

ADA ramp construction details should follow the templates provided. Templates have been separated into resurfacing/stand-alone ADA contracts and widening/reconstruction contracts. The widening/reconstruction templates closely resemble the ADA templates that are provided in new phase 1 reports. The widening/reconstruction templates use a station, offset, slope, and elevation format since an accurate centerline and alignment is available for these projects. The resurfacing/stand-alone ADA templates use a distance, slope, elevation, and reference point format. Since an accurate centerline is not available on resurfacing/stand-alone ADA projects it is essential to provide 2 reference points at each corner to establish control.

Where an ADA ramp facility cannot be made fully compliant, the designer must complete a Maximum Extent Practicable (MEP) Form (BDE Form 3101) discussing barriers to full compliance and alternative design considered. As part of completing BDE Form 3101 an attachment with the description of the situation, alternatives considered, benefits of the proposed design, plan sheet with completed ADA ramp design and design variance circled, and pictures (if available) should be provided. This should be processed through the District's ADA coordinator for further handling.

Information pertaining to the design of the ADA ramps can be found in Chapter 58 of the Bureau of Design and Environment Manual and within the Department's Accessible Public Right of Way Field Guide. Both are on the IDOT website.

The following is additional guidance for designers:

1) Please read all of the notes in the ADA templates before beginning design.

2) The scale and size of text shown on the ADA templates is for IDOT District 1 Workstations. Please ensure text and details are visible on an 11x17 plan sheet. Revise text size as necessary for clarity.

3) At the start of contract plan preparation a request for ground survey of existing locations should be made. For Bureau of Design In-house designers, prior to submitting the survey request the designer must check the ADA GIS map to ensure that there is no overlap of ADA survey/design with a standalone ADA contract.

4) Please submit an environmental survey request for special waste at the same time the ground survey request is submitted. Quantities for special waste can be estimated at this time and revised when design is complete if the initial estimates are inaccurate. Typically 150 to 250 square feet of sidewalk removal and replacement will occur per corner, but can vary significantly based upon existing field conditions.

5) Earth excavation is typically estimated at .01 cubic yard per 1 square foot of sidewalk for when the ground is flat and sidewalk is placed over compacted subgrade. If subbase is installed increased quantity accordingly.

6) Please remember to look out for bus stops when designing ADA curb ramps to ensure that pedestrians have access to bus stops. Coordinate with PACE through IDOT project manager if there are conflicts with existing bus pads or shelters. Preference is to avoid relocation whenever possible.

7) Coordinate with the local municipality through the IDOT project manager if benches need to be relocated or removed.

8) Please maintain brick sidewalks if existing conditions have brick pavers. Coordination with the local agency may be needed. Brick pavers shall meet ADA and PROWAG standards.

9) For pedestrian push buttons outside of the 30"-42" vertical requirement please add the pay item relocate existing pedestrian push button. The proposed push button should be at 36". In addition to the vertical requirements for pedestrian push buttons please ensure pedestrians can horizontally reach the pedestrian push buttons. The front of the push button shall not be further away than 10" from the paved surface. Currently extensions for the push button are manufactured in 6", 12", or 18" variants. Generally maintenance transfer of the traffic signal is not required for relocation of pedestrian push buttons, but confirm with IDOT project manager.

10) Sidewalk design should allow pedestrians to access push-buttons. Need to have a 2.5'x4' paved clear space. No new poles will be added on resurfacing or stand-alone ADA contracts. The recommendation is to have the push button be parallel to the crosswalk.

11) If handholes are impacted please choose the pay item rebuild existing handhole and not the pay item adjust existing handhole as handholes cannot be adjusted. Please remember to add the District 1 special provisions rebuild existing handhole, handholes, and maintenance of existing traffic signal installation. If handhole is located in the existing median that is being converted to a striped median a pay item "rebuild existing handhole to heavy duty handhole" shall be used. Please also add the pay item maintenance of existing traffic signal installation for each signalized intersection impacted.

12) Please note that utilities within the curb ramp should be relocated whenever possible, but if it is not possible then it is acceptable to leave the utility under the curb ramp as long as ADA/PROWAG requirements are met. The detectable warning portion must be free of any utilities such as handholes or frames and lids. If the detectable warning location does not meet PROWAG requirements then a MEP is required.

13) Please remember to look out for water supply valve/buffalo boxes that may need to be relocated as part of the ADA design. 6" valve boxes and valve boxes with a 24" frame and lid are not listed in the status of utilities special provision as the corresponding pay item is provided in the plans for the contractor to adjust. The plans or ADA details must call out the locations of valve box adjustments in the sidewalk. Whenever these valve boxes are in the pavement the special version of the pay item should be used. When in the sidewalk the regular version should be used. Please also remember to coordinate any fire hydrants that may need relocation or adjustment. This is generally listed as a utility conflict but can be done as part of the contract at the local agency cost.

14) If any pedestrian ramps are to be removed due to safety concerns please coordinate with the District 1 Bureau of Traffic Bike and Pedestrian Engineer and Local Agency through the IDOT project manager.

15) Please add the pay item Construction Layout (Special) and the special provision Construction Layout Special for Resurfacing with ADA and Stand-Alone ADA (D-1). If project scope requires more construction layout than just the ADA curb ramps please use the pay item Construction Layout and corresponding special provision. Choose either pay item Construction Layout (Special) or Construction Layout, but not both pay items.

16) Please add the pay item Detectable Warnings (Special), District Detail BD-58, and the special provision Detectable Warnings (Special) in City of Chicago (D-1) for any curb ramp improvements within the City of Chicago to ensure cast iron detectable warnings are used.

17) If during the field visit it is determined that the only element of the ADA curb ramp that is not compliant are the detectable warnings then a specific ADA detail is not required for that curb ramp. A plan sheet callout indicating ADA detectable warning replacement can be provided along with the corresponding quantities of detectable warnings and sidewalk removal and new PCC sidewalk.

18) Please provide a callout or asterisk on the plan sheet indicating each location that will have an ADA curb ramp improvement on resurfacing contracts.

19) Please remember to follow the 15-foot rule for curb ramps and transition segments. Please refer to the attached exhibit for guidance.

20) Patching should only be shown on the ADA details if changes to the cross slope of the roadway are required. Otherwise do not show patching on the ADA details but include a quantity for patching. Generally 4-foot wide patches are recommended based upon the minimum roller size to achieve compaction. Length of the patch should be the length of the curb to be removed.

21) Ensure that water flows off of sidewalk and towards grass or curb and gutter to prevent ponding. Please note locations of inlets for new construction/reconstruction as inlets should not be in PAR. Add pay item lids, type 1, open lid and IDOT Highway Standard 604001 for frame and lids within the depressed curb of the curb ramp.

22) Please add the general note "The contractor shall maintain pedestrian access at all times during construction."

23) If the running slope of a ramp is less than 5%, an upper landing is not required. A transition segment is not considered an upper landing. Therefore no MEP is required if the cross slope of a transition segment exceeds 2%.

24) MEPs are not required for the lower landing area transitioning from a 2% cross sloped ramp to a 5% cross sloped crosswalk at a traffic signal. MEPs are also not required on transition segments when connecting an altered compliant element to an existing element.

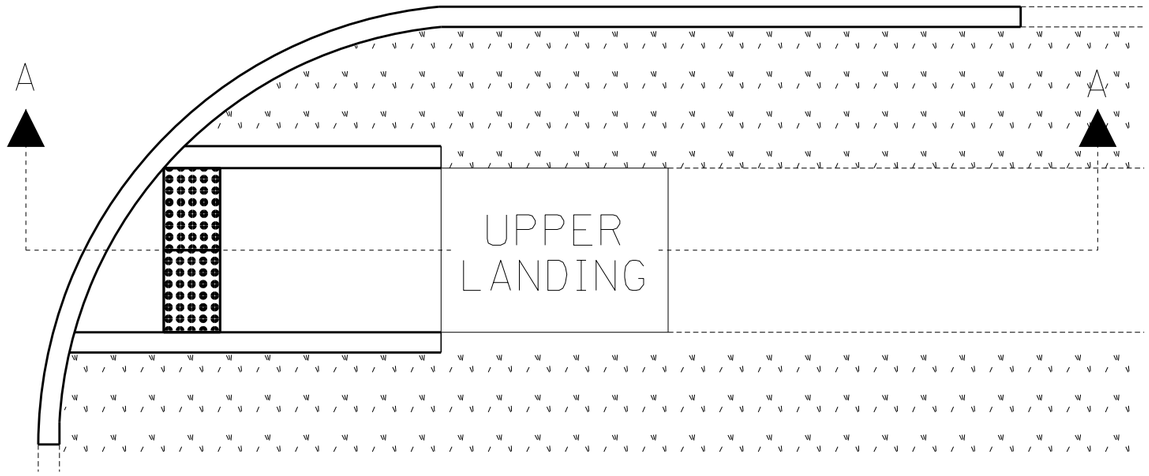
25) MEPs will not be approved for alternative pedestrian routes during construction during the planning and design phase. Generally MEPs will not be approved for reconstruction projects.

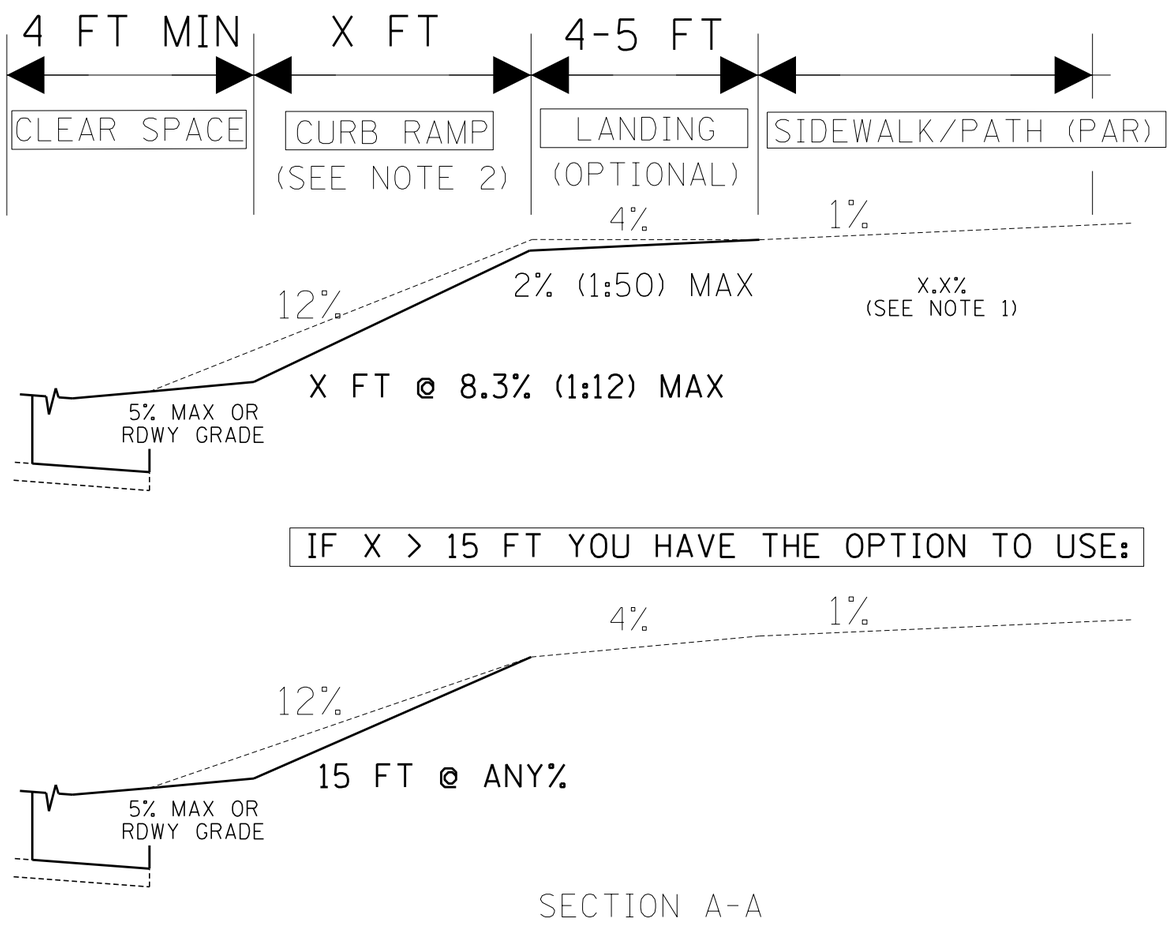
26) MEP forms are reviewed by BDE at the same time as the Monthly FHWA meeting. To have your forms reviewed in a timely manner please ensures that MEP forms are emailed to the District ADA coordinator 2 weeks in advance of the FHWA meeting. Email address for the District ADA coordinator is DOT.D1.ADA@illinois.gov. After approval, the District ADA coordinator will email the Bureau of Programming's Geometrics Unit Head and central office BDE requesting that the MEP forms be reviewed by BDE at the next MEP meeting.

27) Approved MEPs need to be provided to the resident engineer at the preconstruction meeting.

If you have any questions, please contact Fawad Aqueel, Plan Preparation Engineer, at 847-705-4247.

cc: Issam Rayyan
Lisa Heaven Baum





SECTION A-A

15 FT RULE (R304/BDE 58-1.09):

"The running slope of the curb ramp shall be 5% minimum and 8.3% max BUT SHALL NOT REQUIRE THE RAMP LENGTH TO EXCEED 15 FT"

i.e. There is no max length of curb ramp if using 8.3% max; however to avoid "chasing the existing grade" indefinitely,when the 8.3% max exceeds 15 FT, you can alternately utilize a max length of 15 FT and utilize any grade desired.

IDOT'S Highway Standard requires level (i.e. 2% max) upper and lower landings. PROWAG allows the lower landing to meet 5% or the grade of the road and does not require an upper landing. Under the 15 ft rule, provision of an upper landing is up to designer's discretion.

NOTE 1: AFTER THE LANDING USE SLOPE REQUIREMENTS FOR:

SIDEWALK / SIDEPATH (R302.5/BDE 58-1.06)

"Grade shall not exceed the GENERAL GRADE OF ADJACENT STREET. Where PAR is not contained within a street or highway ROW the grade of the PAR SHALL BE 5% MAX."

OR

TRANSITIONAL SEGMENTS (R202.3.2):

Beyond the landing, you are allowed to have a transition zone into the existing sidewalk/path. Use engineering judgement to provide the ADA/PROWAG requirements to the maximum extent practicable. This transition zone does not require a Maximum Extent Practicable Form (BDE 3101) or a Construction Concurrence Form (BDE 5801). As a matter of engineering judgement guidance only, you may use the sidewalk ramp grades shown below.

SIDEWALK RAMP (R407/BDE 58-1.08) (I.E. NOT CURB RAMP):

- *The 15 FT rule does not apply to Sidewalk Ramps
- *Running slope between 5% and 8.3% for new facility. Existing facilities can use the following:
  - Max Rise=6 IN - >8.3% but ≤ 10%
  - Max Rise=3 IN - >10% but ≤ 12.5%
- *Requires 5 FT level landings at top and bottom
- *The Max vertical rise shall be 2.5 FT (30 IN), afterwhich a 5 FT landing is required prior to introducing another ramp to reach desired elevation
- *Requires handrails if vertical rise is > 6 IN or length >72 IN
  - However, avoid the use of handrails whenever possible

NOTE 2:
If the curb ramp running slope is < 5% no landing is required unless a turning space is required for an intersecting sidewalk

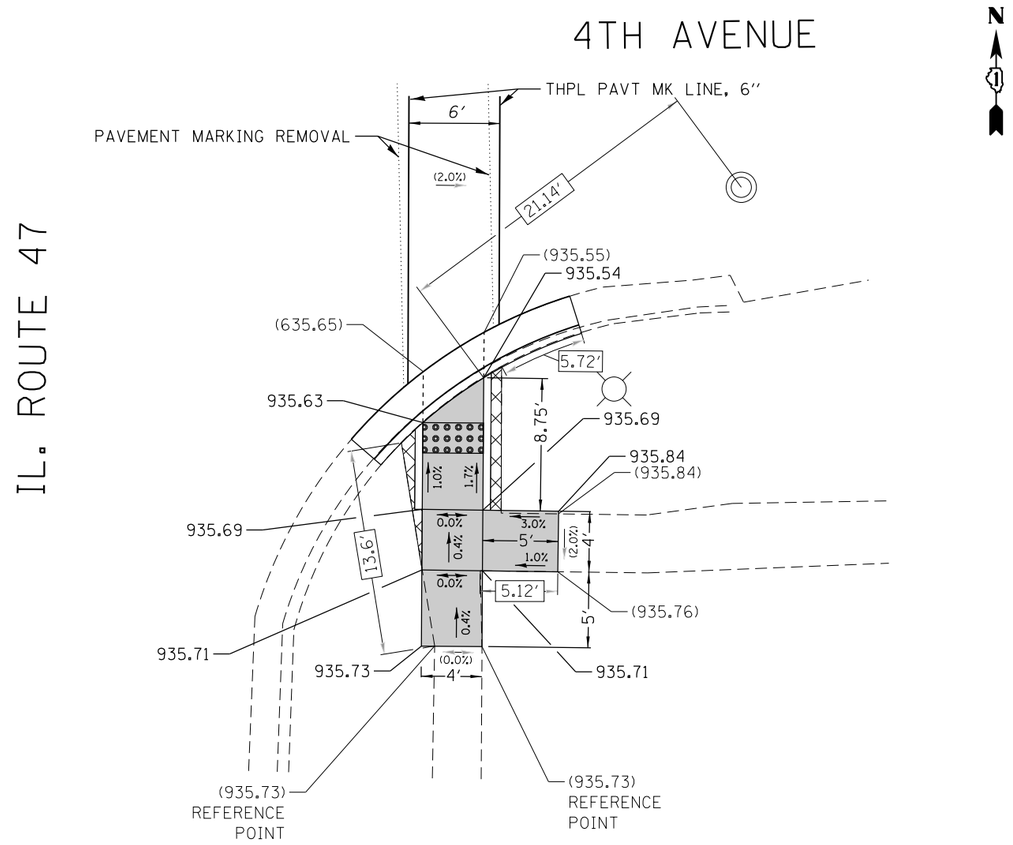
NOTE 3
All slopes shown in this exhibit are running slopes.

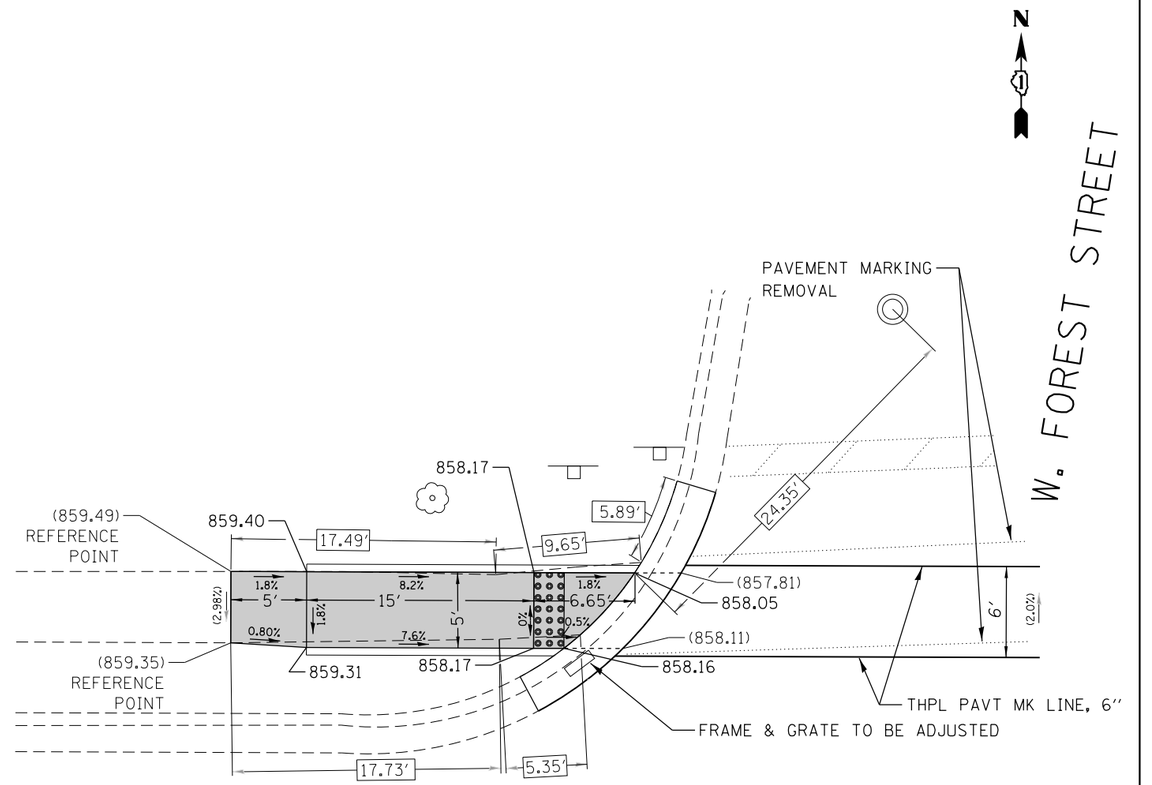
FILE NAME = pw:\\IL084EBIDINTEG.illinois.gov:PWIDOT\Documents\IDOT Offices\District 1\Projects\Program\CADData\Studies\2017\ADA\Detail.dgn	USER NAME = felicianoca	DESIGNED - CAF 08/22/2017	REVISED - CAF - 08/31/2017	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	ADA/PROWAG 15 FT CURB RAMP RULE
		DRAWN -	REVISED -		
Default	PLOT SCALE = 10.0000 ' / in.	CHECKED -	REVISED -		SCALE: / SHEET OF SHEETS / STA. / TO STA.
	PLOT DATE = 10/11/2017	DATE -	REVISED -		

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		CONTRACT NO.		
	ILLINOIS FED. AID PROJECT			

ADA_Detail.dgn 10/11/2017 8:46:52 AM User=felicianoca

ADA DETAILS FOR RESURFACING AND ADA STAND ALONE CONTRACTS





IL. ROUTE 23

FOR DESIGNER REFERENCE:

1.) *THESE ADA DETAILS ARE FOR ILLUSTRATIVE PURPOSES. REFER TO BDE MANUAL AND ADA/PROWAG GUIDELINES FOR DESIGN REQUIREMENTS.*

2.) *FOR RESURFACING /ADA STAND ALONE CONTRACTS, A MINIMUM OF 2 REFERENCE POINTS PER CORNER MUST BE PROVIDED. REFERENCE POINTS CANNOT BE IN LOCATIONS TO BE REMOVED. TYPICALLY PROVIDE AT END OF SIDEWALK REPLACEMENT.*

3.) *EXISTING DISTANCE TO EACH REFERENCE POINT MUST BE PROVIDED.*

4.) *FOLLOW LEGEND FOR LABELING EXISTING ELEVATIONS, SLOPES, AND LENGTHS. PROVIDE ELEVATIONS AT GRADE BREAKS; BENCHMARKS MUST BE INCLUDED*

5.) *DO NOT SHOW LOCATIONS OF PATCHING, BUT INCLUDE IN QUANTITIES AS REQUIRED; 4 FT WIDE FULL DEPTH PATCHES RECOMMENDED.*

6.) *IF ADA/PROWAG REQUIREMENTS CANNOT BE MET BY MODIFYING OTHER DESIGN ELEMENTS, AS A LAST OPTION YOU CAN MODIFY CURB GUTTER FLAG SLOPE FROM -5% TO +5% TO GET CROSS SLOPE BELOW 2%, BUT MAKE SURE GUTTER WATER FLOWS AWAY OR TO EXISTING STRUCTURES. IF THIS IS PURSUED, ADD ELEVATIONS AT EDGE OF PAVEMENT, FLOW LINE, AND BACK OF CURB AS REQUIRED.*

7.) *FOR RESURFACING /ADA STANDALONE CONTRACTS ADD PAY ITEM : CONSTRUCTION LAYOUT (SPECIAL) , LSUM 1.*

8.) *QUANTITIES CAN BE SHOWN ON DETAIL OR PROVIDE SCHEDULE OF QUANTITIES.*

REFERENCE BENCHMARK ELEV 935.33

BENCHMARK : PK NAIL IN CENTERLINE OF IL 47

LOCATION : 57 FT SOUTH OF 3RD AVENUE

LEGEND

xx.xx'	EXISTING LENGTH
═══	PROPOSED SIDE CURB
( )	EXISTING ELEVATION/SLOPE
▭	PROPOSED SIDEWALK
▦	DETECTABLE WARNINGS
▨	SIDEWALK REMOVAL REPLACE W/TOPSOIL & SOD

REFERENCE BENCHMARK ELEV 856.66

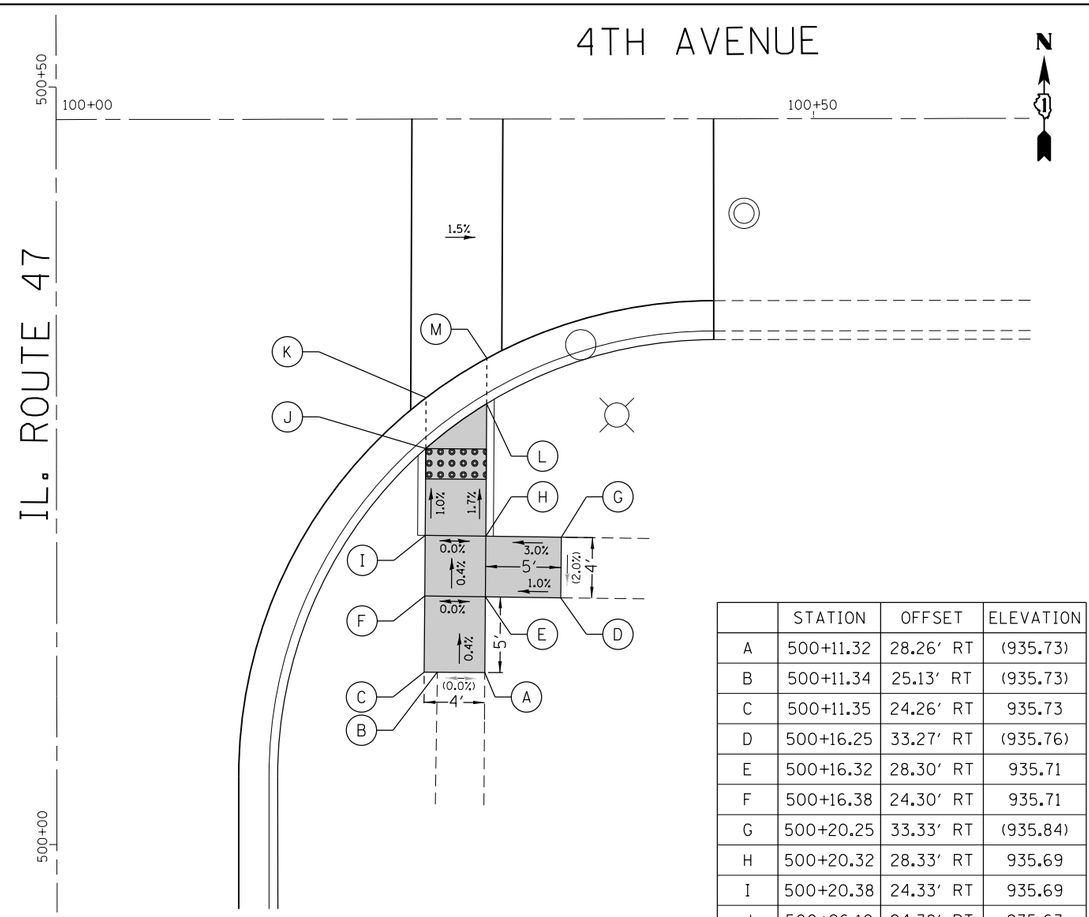
BENCHMARK : ''X'' CUT ON NORTH WESTERNLY LOWER FLANGE BOLT OF HYDRANT

LOCATION : ON NORTH WEST CORNER OF IL ROUTE 23 AND FOREST STREET

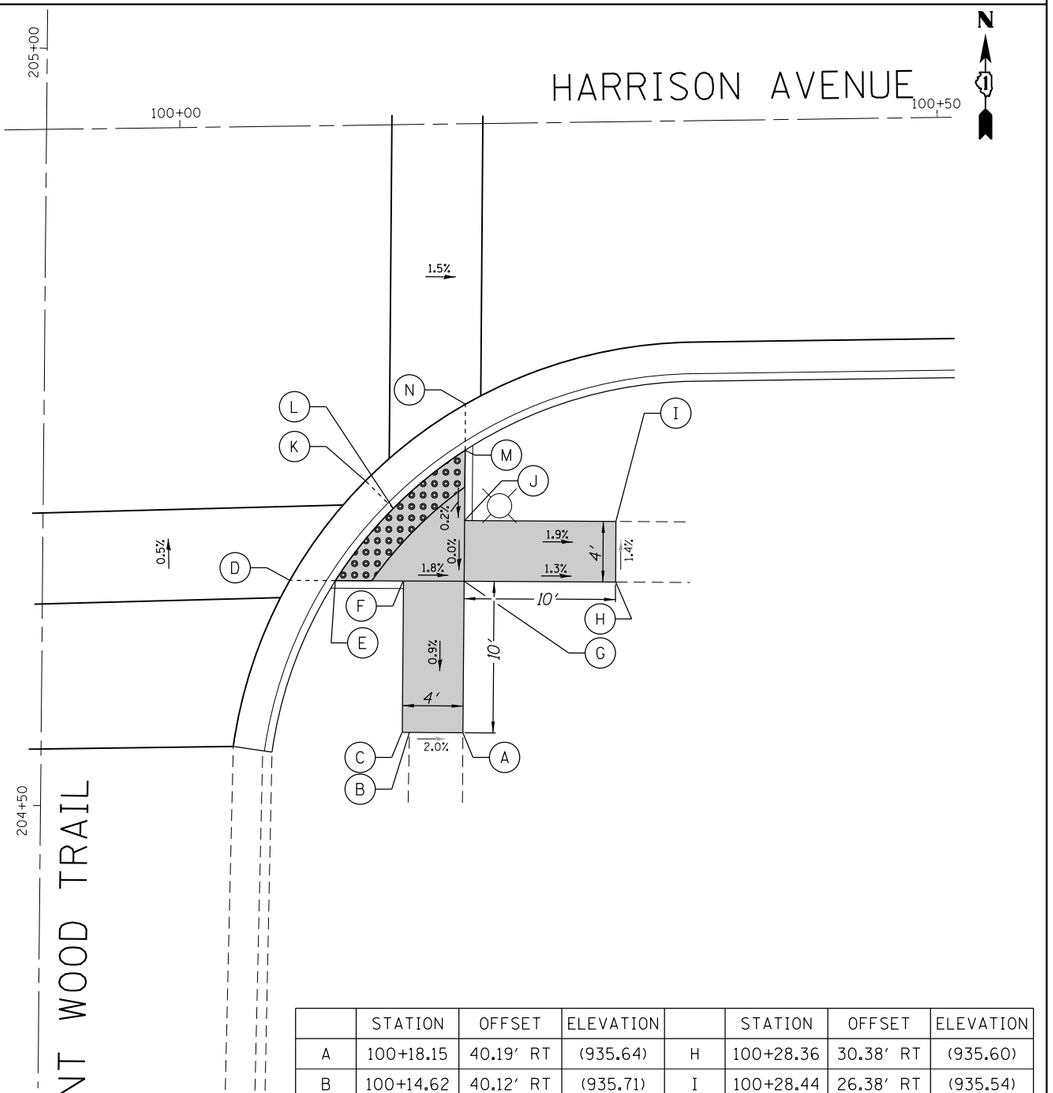
FILE NAME = \\dot016is1lxcl.illinois.gov\D1Users\PENCEPL\My Documents\ADA Standards\Typical-ADA-sht-Drawing.dgn	USER NAME = pencepl	DESIGNED - PLP	10/04/2016	REVISED - PLP	11/07/2016	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SIDEWALK DETAIL PLAN << PROJECT ROAD >> - << PROJECT LIMITS >>				
		DRAWN - PLP	10/04/2016	REVISED - PLP	08/11/2017						
	PLOT SCALE = 10.0000 ' / in.	CHECKED -		REVISED - PLP	09/14/2017						
Default	PLOT DATE = 1/10/2018	DATE -		REVISED - PLP	01/10/2018		SCALE:	SHEET OF SHEETS	STA.	TO STA.	

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		CONTRACT NO.		
ILLINOIS	FED. AID PROJECT			

ADA DETAILS FOR RECONSTRUCT AND WIDENING CONTRACTS



	STATION	OFFSET	ELEVATION
A	500+11.32	28.26′ RT	(935.73)
B	500+11.34	25.13′ RT	(935.73)
C	500+11.35	24.26′ RT	935.73
D	500+16.25	33.27′ RT	(935.76)
E	500+16.32	28.30′ RT	935.71
F	500+16.38	24.30′ RT	935.71
G	500+20.25	33.33′ RT	(935.84)
H	500+20.32	28.33′ RT	935.69
I	500+20.38	24.33′ RT	935.69
J	500+26.10	24.38′ RT	935.63
K	500+29.46′	24.40′ RT	935.65
L	500+29.06	28.40′ RT	935.54
M	500+32.05	28.42′ RT	935.60



	STATION	OFFSET	ELEVATION		STATION	OFFSET	ELEVATION
A	100+18.15	40.19′ RT	(935.64)	H	100+28.36	30.38′ RT	(935.60)
B	100+14.62	40.12′ RT	(935.71)	I	100+28.44	26.38′ RT	(935.54)
C	100+14.15	40.11′ RT	935.72	J	100+18.45	26.20′ RT	935.73
D	100+06.86	29.98′ RT	935.95	K	100+11.94	23.48′ RT	935.86
E	100+09.87	30.04′ RT	935.89	L	100+13.75	25.32′ RT	935.82
F	100+14.33	30.15′ RT	935.81	M	100+18.54	21.55′ RT	935.74
G	100+18.36	30.20′ RT	935.73	N	100+18.61	18.51′ RT	935.80

FOR DESIGNER REFERENCE:

1.) THESE ADA DETAILS ARE FOR ILLUSTRATIVE PURPOSES. REFER TO BDE MANUAL AND ADA/PROWAG GUIDELINES FOR DESIGN REQUIREMENTS.

2.) FOLLOW LEGEND FOR LABELING EXISTING ELEVATIONS, SLOPES, AND LENGTHS.

3.) FOR RECONSTRUCTION/WIDENING CONTRACTS ADD PAY ITEM : Z0013798 CONSTRUCTION LAYOUT LSUM 1.

4.) FOR RECONSTRUCTION/WIDENING CONTRACTS, PROVIDE STATION OFFSETS.

5.) ESTABLISH STATION/OFFSETS BASED UPON MAIN LINE ALIGNMENT.

6.) SHOW EXISTING (PROPOSED) ABOVE GROUND UTILITIES AND SIGNS.

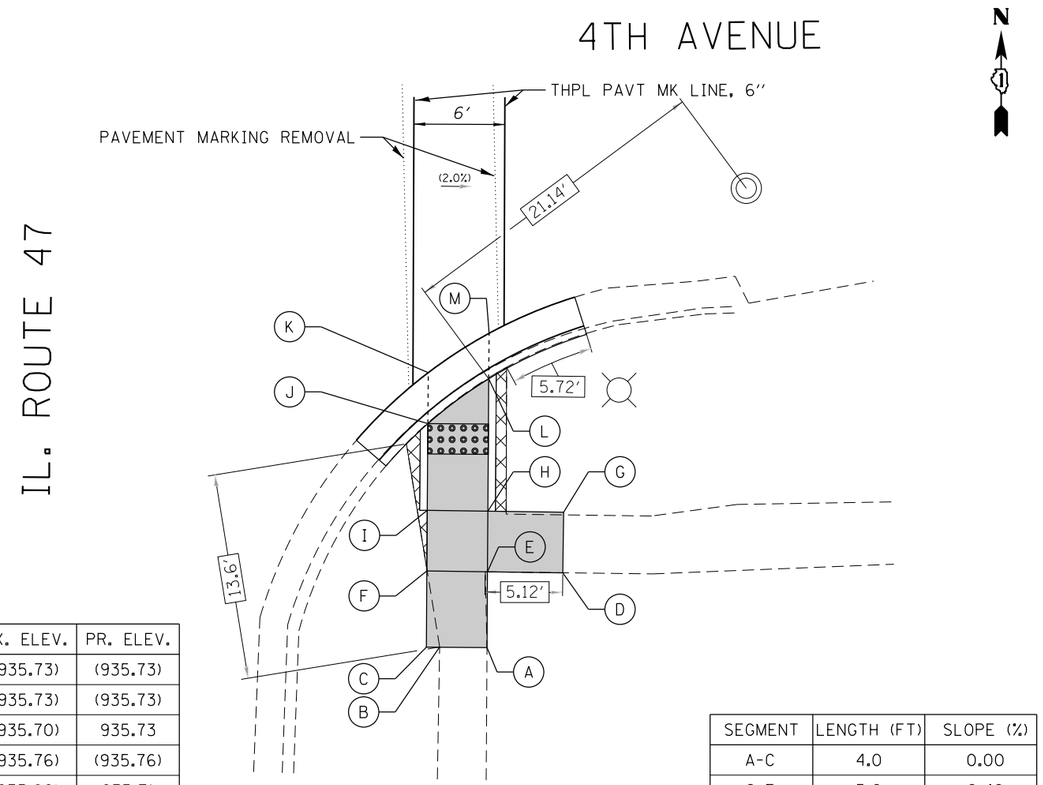
LEGEND

xx.xx′	EXISTING LENGTH
═══	PROPOSED SIDE CURB
( )	EXISTING ELEVATION/SLOPE
	PROPOSED SIDEWALK
	DETECTABLE WARNINGS
	SIDEWALK REMOVAL REPLACE W/TOPSOIL & SOD

FILE NAME = \\dot016is1lxcl.illinois.gov\D1Users\PENCEPL\My Documents\ADA Standards\Typical-ADA-sht-Drawings\Default	USER NAME = pencepl	DESIGNED - PLP 10/04/2016	REVISED - PLP 11/07/2016	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SIDEWALK DETAIL PLAN
	PLOT SCALE = 10.0000 ′ / in.	DRAWN - PLP 10/04/2016	REVISED - PLP 08/11/2017		<< PROJECT ROAD >> - << PROJECT LIMITS >>
	PLOT DATE = 1/10/2018	CHECKED -	REVISED - PLP 09/14/2017		SCALE: SHEET OF SHEETS STA. TO STA.
		DATE -	REVISED - PLP 01/10/2018		

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			CONTRACT NO.	
	ILLINOIS	FED. AID PROJECT		

ADA DETAILS FOR RESURFACING AND ADA STAND ALONE CONTRACTS - WITH TABLES

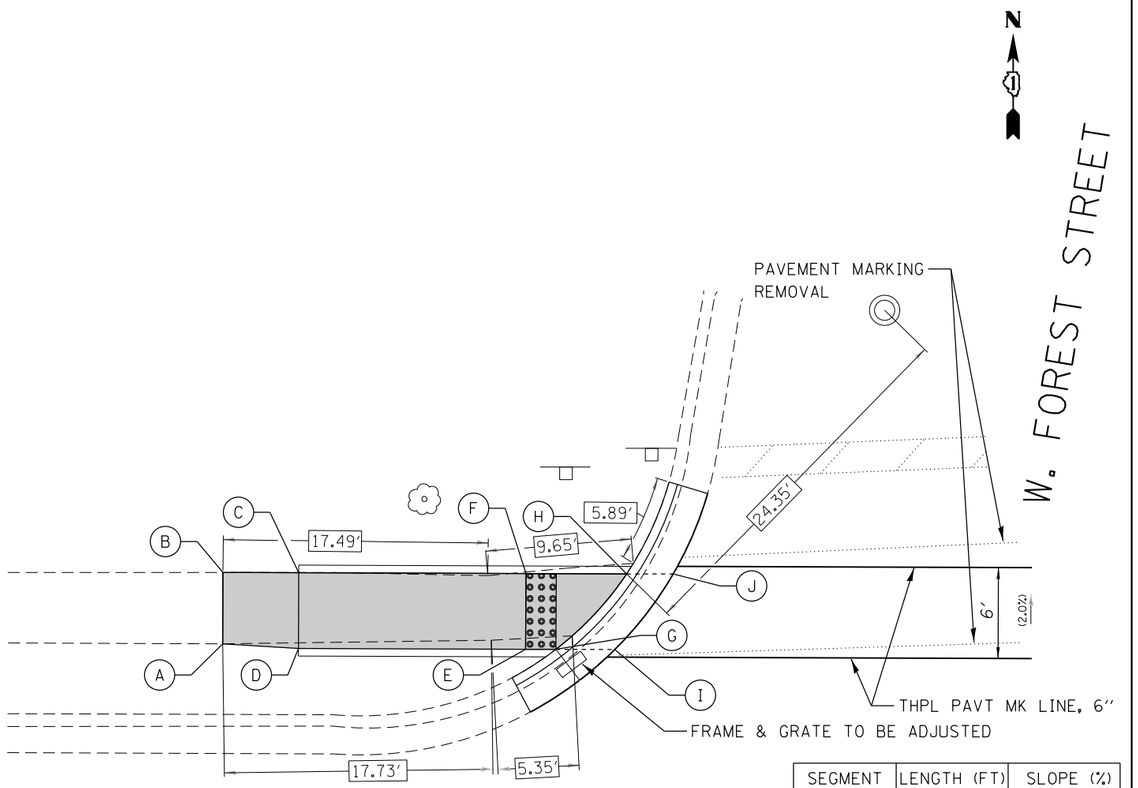


POINT	EX. ELEV.	PR. ELEV.
A	(935.73)	(935.73)
B	(935.73)	(935.73)
C	(935.70)	935.73
D	(935.76)	(935.76)
E	(935.80)	935.71
F	(935.90)	935.71
G	(935.84)	935.84
H	(935.90)	935.69
I	(935.88)	935.69
J	(935.68)	935.63
K	(935.65)	(935.65)
L	(935.75)	935.54
M	(935.55)	(935.55)

SEGMENT	LENGTH (FT)	SLOPE (%)
A-C	4.0	0.00
C-F	5.0	0.40
A-E	5.0	0.40
E-F	4.0	0.00
F-I	4.0	0.40
E-H	4.0	0.40
E-D	5.0	1.00
D-G	4.0	(2.00)
H-G	5.0	3.00
H-L	8.74	1.72
H-I	4.0	0.00
I-J	5.73	1.05

NOTES:

1.) TABLES ARE AN ACCEPTABLE ALTERNATIVE FOR RESURFACING AND ADA STAND ALONE CONTRACTS



POINT	EX. ELEV.	PR. ELEV.
A	(859.35)	(859.35)
B	(859.49)	(859.49)
C	(859.18)	859.40
D	(859.11)	859.31
E	(858.40)	858.17
F	(858.25)	858.17
G	(858.35)	858.16
H	(857.85)	858.05
I	(858.10)	858.11
J	(857.81)	857.88

SEGMENT	LENGTH (FT)	SLOPE (%)
A-B	4.7	(2.98)
A-D	5.01	0.80
B-C	5.0	1.80
C-D	5.0	1.80
D-E	15.0	7.60
C-F	15.0	8.20
E-F	5.0	0.00
F-H	6.65	1.80
E-G	2.0	0.50
G-H	6.86*	1.60
I-J	6.32*	3.64

* = ARC LENGTH

REFERENCE BENCHMARK ELEV 935.33

BENCHMARK : PK NAIL IN CENTERLINE OF IL 47

LOCATION : 57 FT SOUTH OF 3RD AVENUE

LEGEND

xx.xx'	EXISTING LENGTH
═══	PROPOSED SIDE CURB
( )	EXISTING ELEVATION/SLOPE
	PROPOSED SIDEWALK
	DETECTABLE WARNINGS
	SIDEWALK REMOVAL REPLACE W/TOPSOIL & SOD

REFERENCE BENCHMARK ELEV 856.66

BENCHMARK : ''X'' CUT ON NORTH WESTERNLY LOWER FLANGE BOLT OF HYDRANT

LOCATION : ON NORTH WEST CORNER OF IL ROUTE 23 AND FOREST STREET

FILE NAME = \\dot016is1xcl.illinois.gov\D1Users\PENCEPL\My Documents\ADA Standards\Typical-ADA-sht-Drawings.dgn	USER NAME = pencepl	DESIGNED - PLP	10/04/2016	REVISED - PLP	11/07/2016	
	PLOT SCALE = 10.0000 '/ in.	DRAWN - PLP	10/04/2016	REVISED - PLP	08/11/2017	
Default	PLOT DATE = 1/10/2018	CHECKED -		REVISED - PLP	09/14/2017	
		DATE -		REVISED - PLP	01/10/2018	

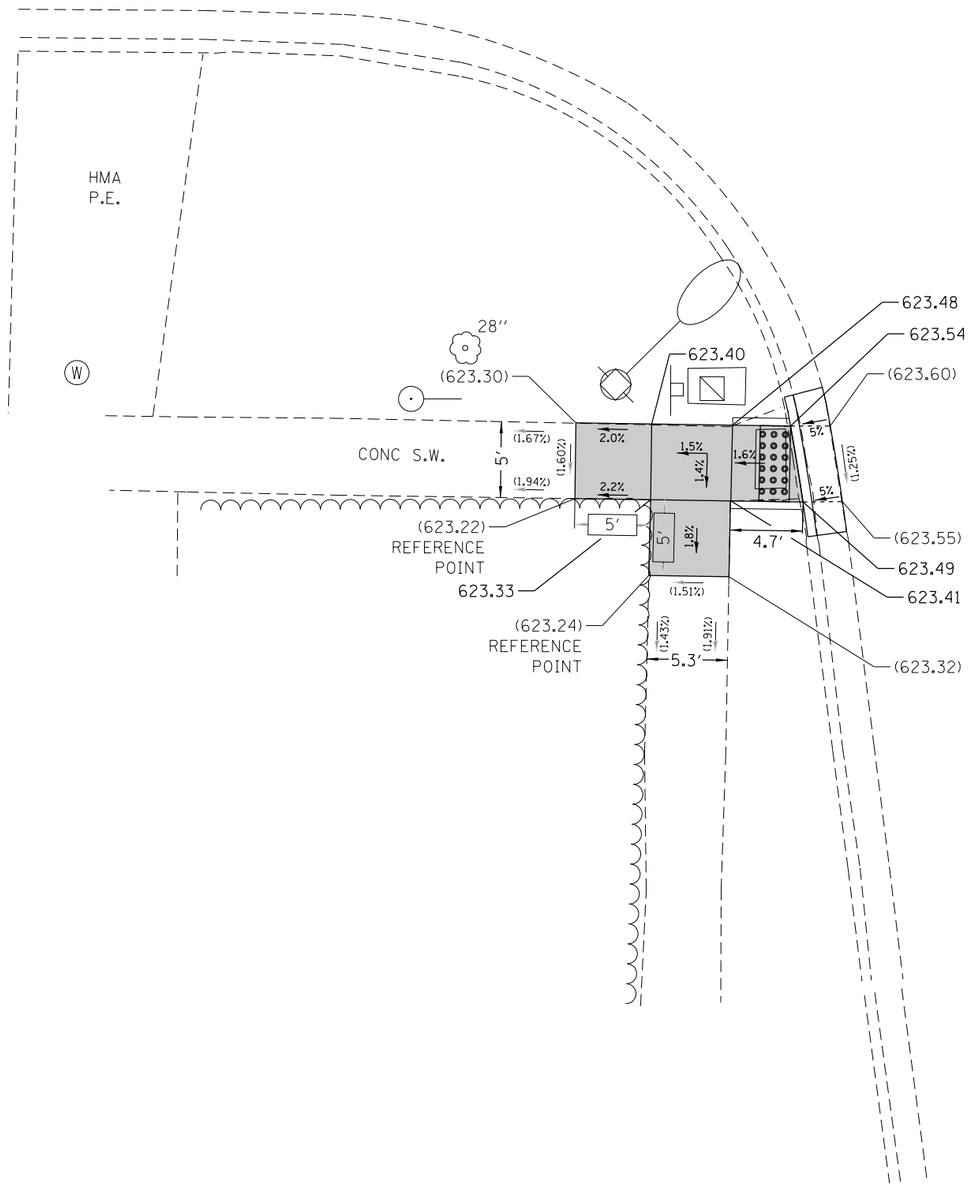
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

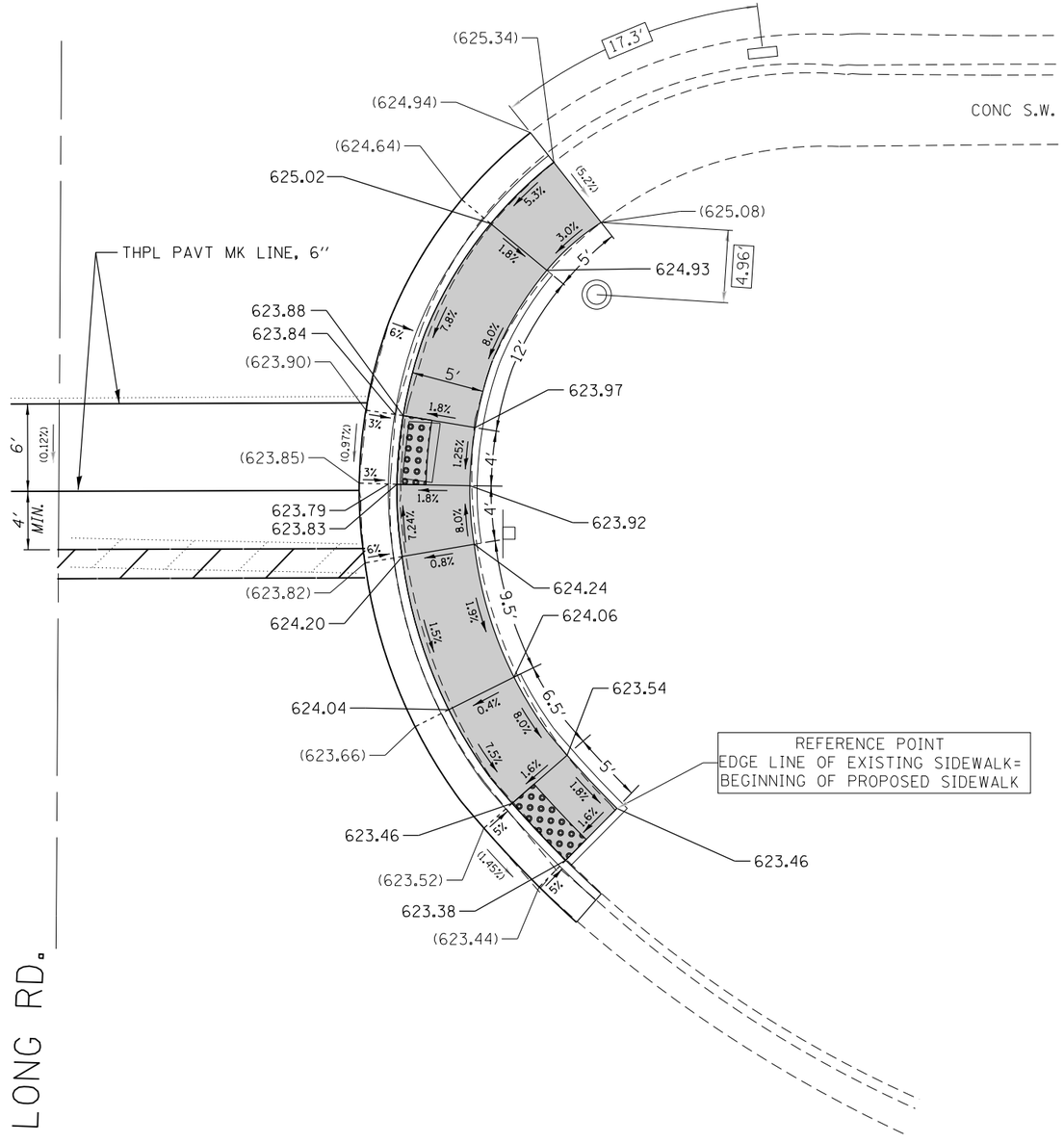
SIDEWALK DETAIL PLAN
<<PROJECT ROAD>> - <<PROJECT LIMITS>>

SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		CONTRACT NO.		
	ILLINOIS FED. AID PROJECT			

ADA DETAILS FOR RESURFACING AND ADA STAND ALONE CONTRACTS - CURVED SIDEWALK EXAMPLE





REFERENCE BENCHMARK ELEV 626.077

BENCHMARK : TOP OF FIRE HYDRANT

LOCATION : NORTH WEST CORNER OF LONG ROAD AND GLENVIEW ROAD

LEGEND

xx.xx'	EXISTING LENGTH
———	PROPOSED SIDE CURB
( )	EXISTING ELEVATION/SLOPE
	PROPOSED SIDEWALK
	DETECTABLE WARNINGS
	SIDEWALK REMOVAL REPLACE W/TOPSOIL & SOD

FILE NAME = \\dot016isilxcl.illinois.gov\D\Users\PENCEPL\My Documents\ADA Standards\Typical-ADA-sht-Drawing.dgn	USER NAME = pencepl	DESIGNED - --- --/--/----	REVISED - PLP 01/10/2018
		DRAWN - --- --/--/----	REVISED -
	PLOT SCALE = 10.0000 ' / in.	CHECKED -	REVISED -
Default	PLOT DATE = 1/10/2018	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SIDEWALK DETAIL PLAN
<<PROJECT ROAD>> - <<PROJECT LIMITS>>

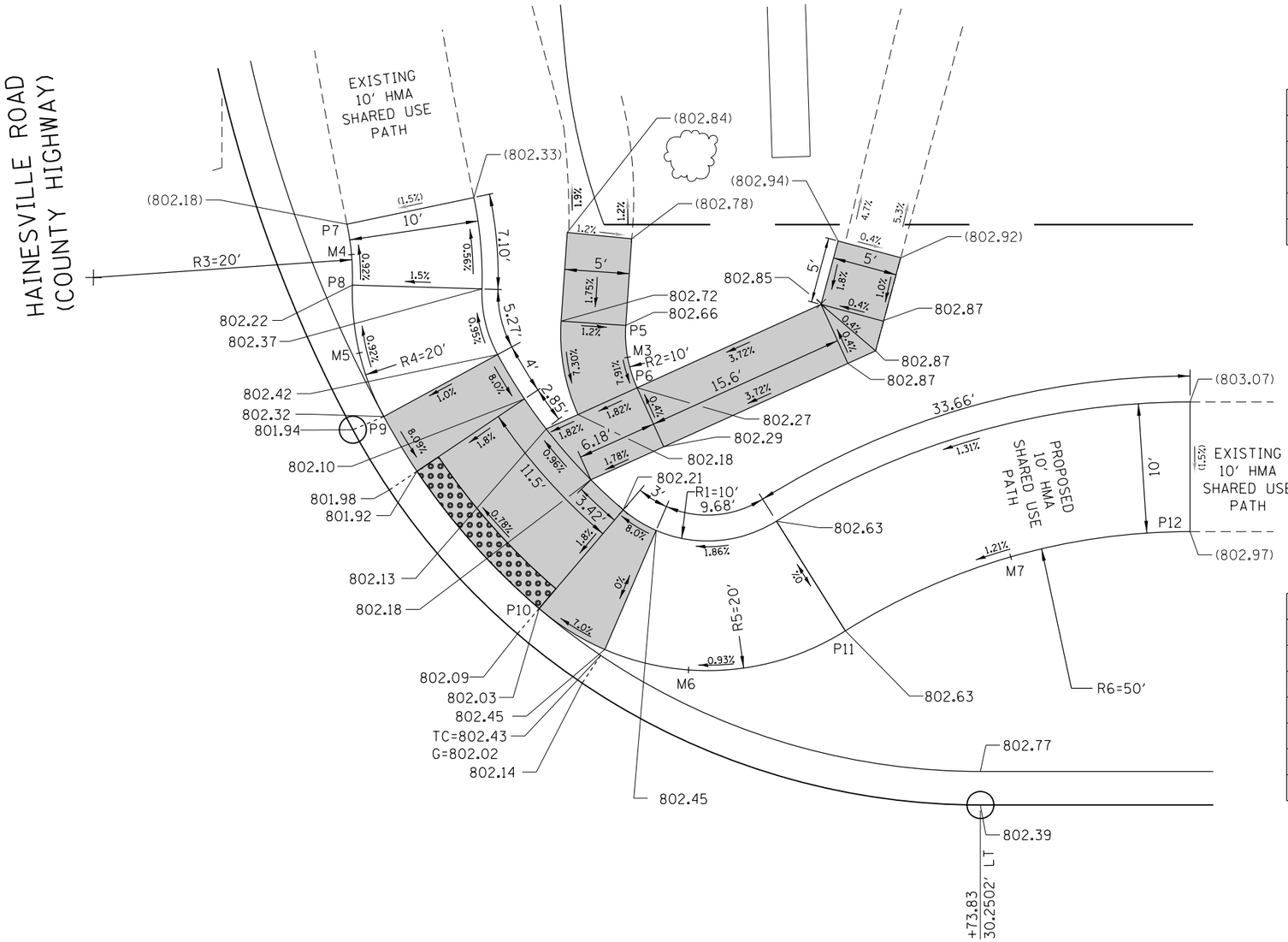
SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.

CONTRACT NO.

ILLINOIS FED. AID PROJECT

ADA DETAILS FOR RECONSTRUCT AND WIDENING CONTRACTS - CURVED SIDEWALK EXAMPLE



IL. ROUTE 120
(BELVIDERE ROAD)

	STATION	OFFSET	RADIUS
R2	500+56.4373	66.5577' LT	10'
R3	500+05.3691	70.9311' LT	20'
R4	500+45.3521	69.7642' LT	20'
R5	500+52.7661	60.6091' LT	20'
R6	500+90.0127	1.3411' LT	50'

	STATION	OFFSET		STATION	OFFSET
P5	500+46.4603	67.2359' LT	P9	500+27.7810	60.2107' LT
M3	500+46.5964	64.7807' LT	P10	500+39.7690	45.4079' LT
P6	500+47.3276	62.4328' LT	M6	500+51.3042	40.6626' LT
P7	500+24.9401	75.0514' LT	P11	500+63.4080	43.6754' LT
M4	500+25.2897	72.7120' LT	M7	500+76.1692	49.3865' LT
P8	500+25.3606	70.3476' LT	P12	500+90.0127	51.3411' LT
M5	500+25.8991	65.1188' LT			

LEGEND

- PROPOSED SIDEWALK
- xx.xx' EXISTING LENGTH
- DETECTABLE WARNINGS
- PROPOSED SIDE CURB
- SIDEWALK REMOVAL REPLACE W/TOPSOIL & SOD
- ( ) EXISTING ELEVATION/SLOPE

FILE NAME = \\dot016isilxcl.illinois.gov\D1Users\PENCEPL\My Documents\ADA Standards\Typical-ADA-sht-Drawings	USER NAME = pencepl	DESIGNED - --- --/--/----	REVISED - PLP 01/10/2018	
		DRAWN - --- --/--/----	REVISED -	
	PLOT SCALE = 10.0000 ' / in.	CHECKED -	REVISED -	
Default	PLOT DATE = 1/10/2018	DATE -	REVISED -	

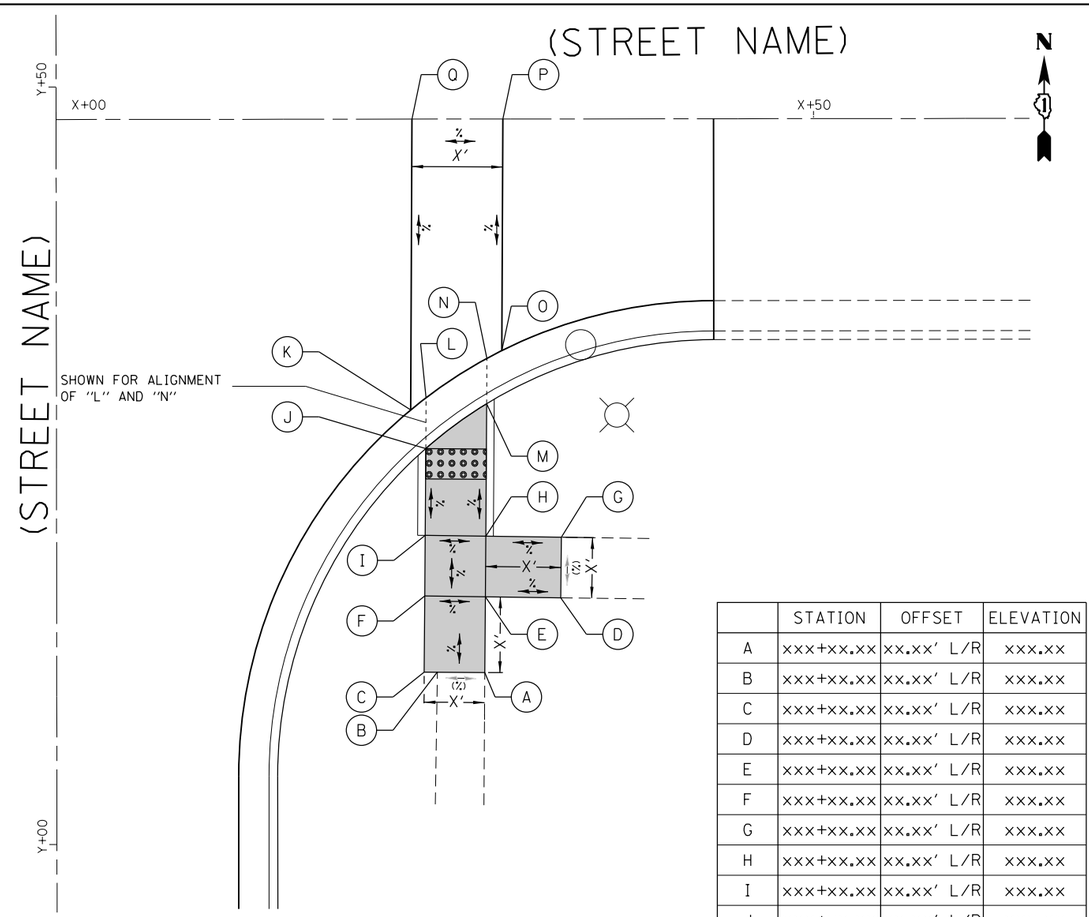
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SIDEWALK DETAIL PLAN
< <PROJECT ROAD> > - < <PROJECT LIMITS> >

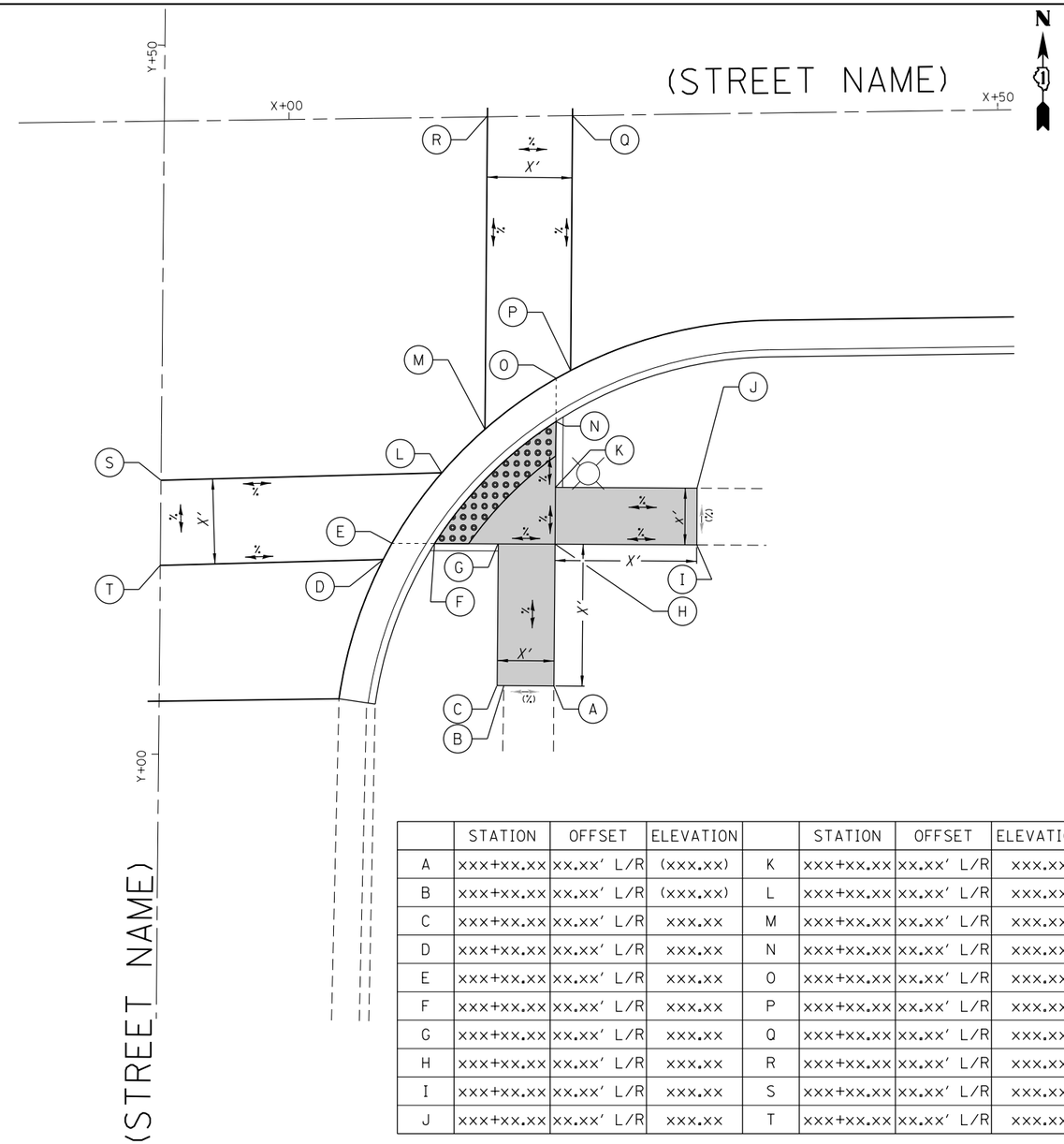
SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		CONTRACT NO.		
	ILLINOIS FED. AID PROJECT			

ADA DETAILS FOR PHASE 1 PROJECTS



	STATION	OFFSET	ELEVATION
A	xxx+xx.xx	xx.xx' L/R	xxx.xx
B	xxx+xx.xx	xx.xx' L/R	xxx.xx
C	xxx+xx.xx	xx.xx' L/R	xxx.xx
D	xxx+xx.xx	xx.xx' L/R	xxx.xx
E	xxx+xx.xx	xx.xx' L/R	xxx.xx
F	xxx+xx.xx	xx.xx' L/R	xxx.xx
G	xxx+xx.xx	xx.xx' L/R	xxx.xx
H	xxx+xx.xx	xx.xx' L/R	xxx.xx
I	xxx+xx.xx	xx.xx' L/R	xxx.xx
J	xxx+xx.xx	xx.xx' L/R	xxx.xx
K	xxx+xx.xx	xx.xx' L/R	xxx.xx
L	xxx+xx.xx	xx.xx' L/R	xxx.xx
M	xxx+xx.xx	xx.xx' L/R	xxx.xx
N	xxx+xx.xx	xx.xx' L/R	xxx.xx
O	xxx+xx.xx	xx.xx' L/R	xxx.xx
P	xxx+xx.xx	xx.xx' L/R	xxx.xx
Q	xxx+xx.xx	xx.xx' L/R	xxx.xx



	STATION	OFFSET	ELEVATION		STATION	OFFSET	ELEVATION
A	xxx+xx.xx	xx.xx' L/R	(xxx.xx)	K	xxx+xx.xx	xx.xx' L/R	xxx.xx
B	xxx+xx.xx	xx.xx' L/R	(xxx.xx)	L	xxx+xx.xx	xx.xx' L/R	xxx.xx
C	xxx+xx.xx	xx.xx' L/R	xxx.xx	M	xxx+xx.xx	xx.xx' L/R	xxx.xx
D	xxx+xx.xx	xx.xx' L/R	xxx.xx	N	xxx+xx.xx	xx.xx' L/R	xxx.xx
E	xxx+xx.xx	xx.xx' L/R	xxx.xx	O	xxx+xx.xx	xx.xx' L/R	xxx.xx
F	xxx+xx.xx	xx.xx' L/R	xxx.xx	P	xxx+xx.xx	xx.xx' L/R	xxx.xx
G	xxx+xx.xx	xx.xx' L/R	xxx.xx	Q	xxx+xx.xx	xx.xx' L/R	xxx.xx
H	xxx+xx.xx	xx.xx' L/R	xxx.xx	R	xxx+xx.xx	xx.xx' L/R	xxx.xx
I	xxx+xx.xx	xx.xx' L/R	xxx.xx	S	xxx+xx.xx	xx.xx' L/R	xxx.xx
J	xxx+xx.xx	xx.xx' L/R	xxx.xx	T	xxx+xx.xx	xx.xx' L/R	xxx.xx

NOTES:

1.) *THESE ADA DETAILS ARE FOR PRESENTATION PURPOSES. REFER TO THE CURRENT BDE MANUAL AND ADA/PROWAG GUIDELINES FOR DESIGN REQUIREMENTS.*

2.) *FOLLOW LEGEND FOR LABELING EXISTING ELEVATIONS, SLOPES, AND LENGTHS.*

3.) *ESTABLISH STATIONS/OFFSETS BASED ON 1 CENTERLINE FOR EACH CORNER.*

4.) *SHOW EXISTING (PROPOSED) ABOVE GROUND UTILITIES AND SIGNS.*

5.) *PROVIDE STATIONING FOR POINTS "S" AND "T" (OR "O" & "R") ON BOTH AXIS IN ORDER TO CONFIRM THEY MATCH WITH THEIR ASSOCIATED PROFILE.*

6.) *DO NOT DESIGN TO THE MAXIMUM ALLOWABLE CROSS-SLOPES AND RUNNING SLOPES SO AS TO ALLOW FOR CONSTRUCTION TOLERANCES.*

7.) *SUBMIT PLANS SIZED AT 1"=20' (FULL SIZED) OR 1"=10' (11x17). 1 OR 2 RADII OF RETURN SHOULD BE PROVIDED PER SHEET.*

8.) *IF PARALLEL SIDEWALK SLOPES DO NOT MATCH, LABEL BOTH SLOPES. FOR EXAMPLE, IF H-G DOES NOT MATCH E-D, BOTH SLOPES SHOULD BE LABELED.*

LEGEND

- xx.xx' — EXISTING LENGTH
- PROPOSED SIDE CURB
- ( ) — EXISTING ELEVATION/SLOPE
- PROPOSED SIDEWALK
- DETECTABLE WARNINGS
- SIDEWALK REMOVAL REPLACE W/TOPSOIL & SOD

FILE NAME =	USER NAME = pencepl	DESIGNED - PLP	10/04/2016	REVISED - PLP	11/07/2016	
\\dot016is1xcl.illinois.gov\D1Users\PENCEPL\My Documents\ADA Standards\Typical-ADA-sht-Drawing		DRAWN - PLP	10/04/2016	REVISED - PLP	08/11/2017	
	PLOT SCALE = 10.0000 ' / in.	CHECKED -		REVISED - PLP	09/14/2017	
Default	PLOT DATE = 1/10/2018	DATE -		REVISED - PLP	01/10/2018	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SIDEWALK DETAIL PLAN
<<PROJECT ROAD>> - <<PROJECT LIMITS>>

SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.

CONTRACT NO.

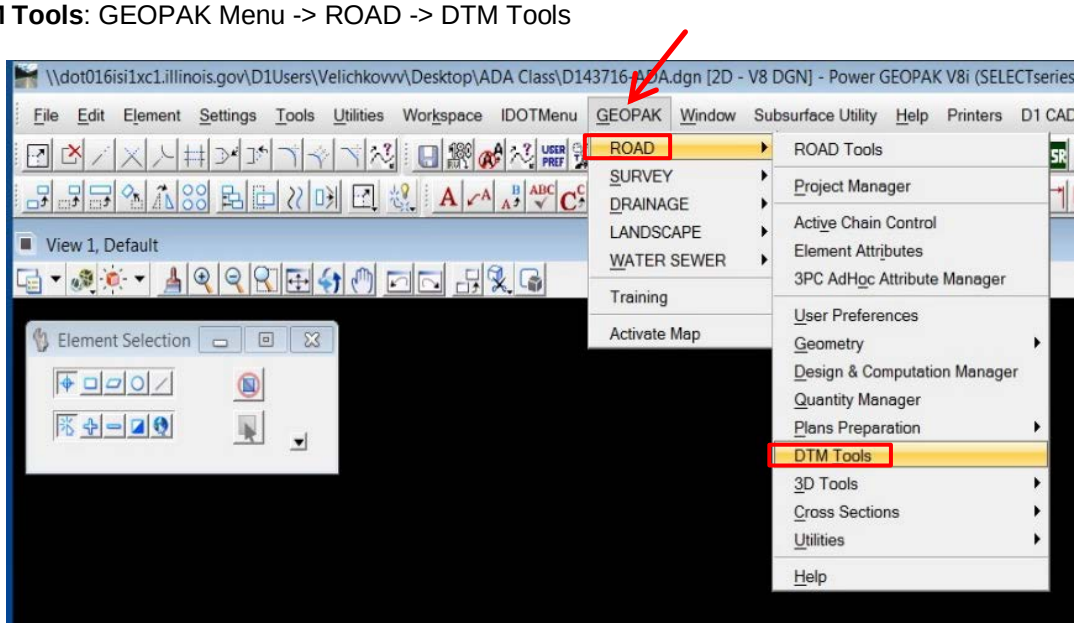
ILLINOIS FED. AID PROJECT

GEOPAK Hight / Slope Query Tool

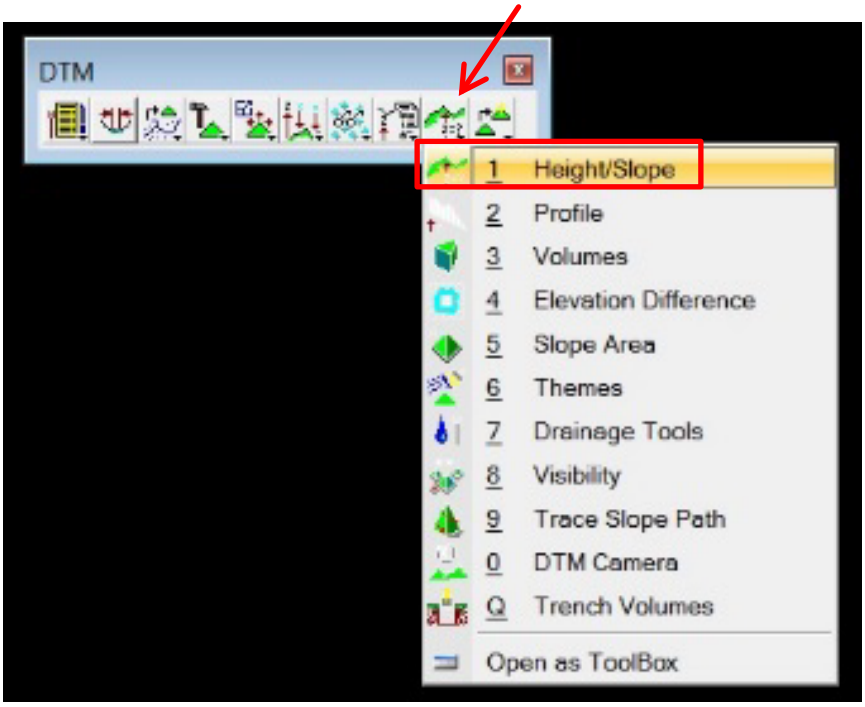
1) Preconditions:

- Digital Terrain Model (DTM) generated from survey data.
- TIN File: File where the triangulated model is stored in binary format. A TIN extension is assumed for the binary file containing the triangulated model.

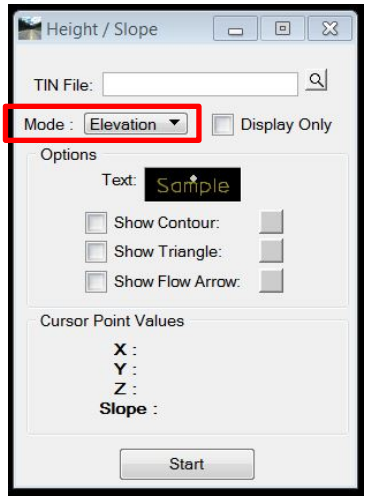
2) **DTM Tools**: GEOPAK Menu -> ROAD -> DTM Tools

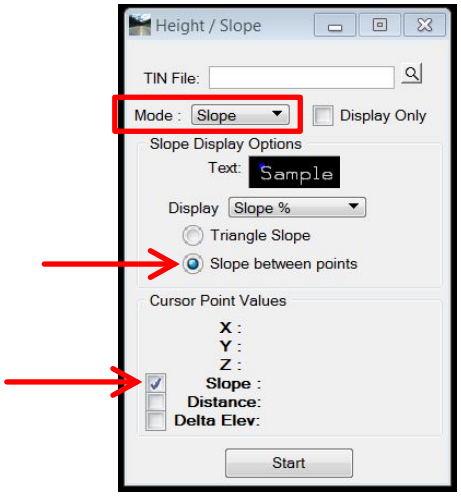


3) **Analysis** (second to last icon): Height / Slope

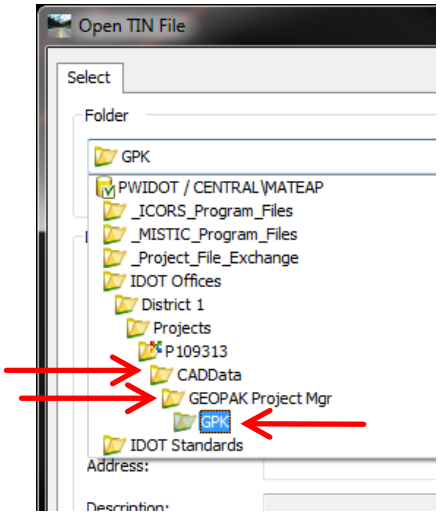


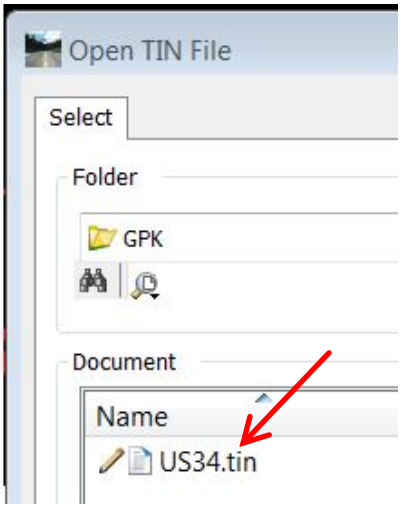
4) **Height / Slope**

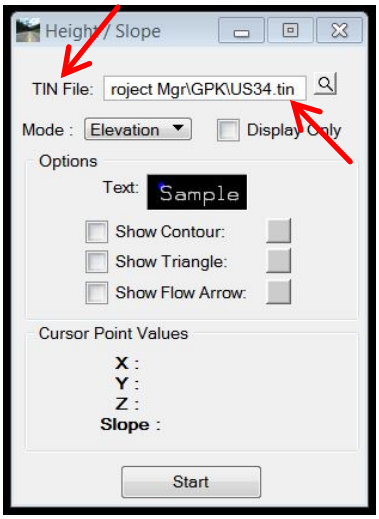




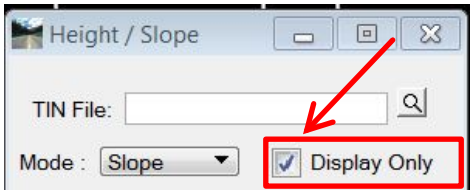
5) Load .**tin** file. Located (typically) in GPK folder of your project:
P(D)123456 -> CADData -> GEOPAK Project Mgr -> GPK



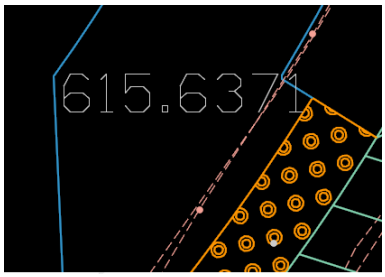




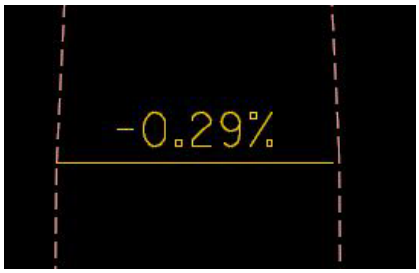
6) Plan View Coordinates, **Elevation**, and **Slope** of the triangulated model can be queried:



Turn on **Display Only**, if you do not want the data drawn into the MicroStation file.



Mode: Elevation -> elevation at any point within the boundary of the triangulated model.



Mode: Slope -> slope between (any) two points within the boundary of the triangulated model.

Illinois Department of Transportation

Memorandum

To:	IDOT District One Bureau Chiefs and Staff
From:	John Fortmann, Deputy Director of Highways Region One Engineer
Subject:	ADA/PROWAG Alterations on State Highways
Date:	August 22, 2016

Section 504 (49 CRF Part 27) of the Rehabilitation Act of 1973 (29 USC 794), the Illinois Environmental Barriers Act (410 ILCS 25/1), and Title II (28 CFR Part 35) of the Americans with Disabilities Act (ADA) of 1990 (42 USC 12131) prohibit discrimination on the basis of disability by public entities. To that end, the Department must ensure newly constructed facilities, and existing facilities being altered, are accessible to the disabled.

The ADA accessibility criteria is presented in Chapters 58 and 31, as well as the various Federal and state ADA standards that are applicable whenever pedestrian access, circulation, or use is affected, or could be affected, by a project. As described in the BDE Manual Section 58-1.01(b), newly constructed facilities and elements added to existing facilities must be fully compliant with the criteria. However, existing elements that are altered must comply with the criteria to the maximum extent practicable within the scope of the project. This typically means that alterations must also be fully compliant unless there are existing physical constraints or qualified historic facilities which make full compliance impracticable.

As part of the ADA Transition Plan, each district is responsible to have an inventory of non-compliant facilities and demonstrate a movement towards compliance each year after the plan is released. Facilities are defined as all sidewalks, curb ramps, crosswalks (marked and unmarked), pedestrian traffic signals, weigh stations and rest stops. A yearly ADA Transition Plan Inventory Report is required by each district, documenting facilities that are non-compliant and demonstrating yearly progress.

This memorandum will establish additional procedures to be carried out by the District One Bureaus of Local Roads and Streets, Programming, Design, Construction, and Traffic Operations to monitor our district's inventory compliance on State Highways:

1. New Projects - Staff in the Bureaus of Local Roads and Streets, Traffic Operations Permit Section, Programming and Design shall be responsible for filling out a new District form called the "ADA Project Alert" (D1 PD0038). This form will inform the District One ADA Coordinator about new projects that could potentially alter or propose facilities within the State right-of-way (ROW). These new project forms will be recorded in the ADA Inventory Database by the District ADA Coordinator or the Bureau of Programming's designated staff for future inquiry documentation and/or follow up.

   During the Pre-Construction meeting, any Maximum Extent Practicable forms shall be given to the Construction resident engineer/technician for their information and records.

2. ADA Inspections - The Bureau of Construction's resident engineers/technicians, Local Roads and Streets' field engineers, and/or Traffic Operation Permit Section's engineers overseeing any improvement or permit which alters the facilities in the public ROW shall be responsible for filling out, or cause to fill out, an "ADA/PROWAG Inspection Form" (D1 PD0031) for each facility being altered. These forms shall be kept in their Bureau's project file in compliance with the Document Management Manual document retention schedule for future proof of inspection and compliance.

3. Final Inspections - At the completion of the project's construction, staff in the Bureaus of Local Roads and Streets, Construction and/or Traffic Operations shall be responsible for filling out a new District form called "ADA Inspection Summary" (D1 PD0039) as part of the project close out documentation. This form will document the compliance of all facilities that were altered or created in the State ROW. These forms shall be transmitted to the Bureau of Programming to record these changes in compliance. The District's ADA Coordinator or the Bureau of Programming's designated staff will record these changes in the ADA Inventory Database for future inquiry documentation and/or follow up.

4. Non-Compliance - Those facilities that are proposed to be altered but are not able to be made ADA/PROWAG compliant within the scope of the project shall be discussed at the BDE/FHWA district coordination meetings by the bureau responsible for the alteration.

Staff shall clearly demonstrate that compliance is not feasible, document what will otherwise be done to apply the ADA standards to the maximum extent practicable, and complete the "ADA Maximum Extent Practicable Form" (BDE 3101) attaching any supporting documentation.

The documentation in the maximum extent practicable request will vary on a case-by-case basis; however, cost is not a factor. The FHWA and BDE representatives will evaluate the documentation and determine whether or not the element is designed to the maximum extent practicable. If approved, those facilities will be added to the District's ADA Transition Plan Inventory Database until the non-compliant element is improved to full compliance. During the Pre-Construction meeting, any Maximum Extent Practicable forms shall be given to the Construction resident engineer/technician for their information and records.

Projects currently under construction that encounter a facility that cannot be made ADA/PROWAG compliant and for which a Maximum Extent Practicable form was not approved prior to construction must fill out the "ADA Construction Concurrence" (BDE 5801) form with any supporting exhibits/documentation. This form will be submitted to the District ADA Coordinator who along with the Designer can work with the Construction resident engineer/technician to determine the best maximum extent practicable alternative to use in construction. Resident engineers/technicians and their contractors must identify the non-compliance issues early to avoid incurring additional project costs or redoing work. The contractor shall be made responsible for bringing all facilities to compliance or provide proper justification as outlined above. BDE 5801 will be retained in the project file as record against future complaints and documented in the ADA Transition Plan Inventory Database.

5. Permit Projects - Any permits within incorporated municipalities which alter facilities in the State ROW shall require the Bureau of Traffic Operation's Permit Section staff, or their designated local agency, to be responsible submitting the "ADA Project Alert" (D1 PD0038) and any "ADA Maximum Extent Practicable" (BDE 3101) forms with supporting documentation/approval to the Bureau of Programming after the permit has been issued/approved by the Permit Engineer.

   Permit projects under construction that encounter a facility that cannot be made ADA/PROWAG compliant and for which a Maximum Extent Practicable form was not approved prior to the permit approval must fill out the "ADA Construction Concurrence" (BDE 5801) form with any supporting exhibits/documentation. This form will be submitted to the District ADA Coordinator who along with the Permit Engineer can work

with the permit applicant to determine the best maximum extent practicable alternative to use in construction.

The permit applicant shall be made responsible for bringing all facilities to compliance or provide proper justification as outlined above. Once the permit's construction has been completed, the "ADA Inspection Summary" (D1 PD0039) form and any required "ADA Construction Concurrence" (BDE 5801) forms with supporting documentation, shall be submitted to the Bureau of Programming to update the ADA Transition Plan Inventory Database.

If facilities are altered in the State ROW within unincorporated areas, the developer or permit applicant shall be responsible for these forms and/or presentations.

6. Local Roads & Streets Projects - Any projects requiring review by the Bureau of Local Roads & Streets shall require the field engineer overseeing the project, or their designated local agency, to be responsible for the "ADA/PROWAG Inspection" (D1 PD0031) and "ADA Inspection Summary" (D1 PD0039) forms; and if required, the "ADA Maximum Extent Practicable" (BDE 3101) or "ADA Construction Concurrence" (BDE 5801) forms and presentations, as appropriate.

7. Complaints - Any complaints received by the bureaus regarding facilities with non-compliant accessibility and their resolution shall be sent to the District ADA Coordinator for their information. The District's ADA Coordinator or the Bureau of Programming's designated staff will record these complaints in the ADA Inventory Database for future inquiry documentation and/or follow up. Citizen complaints can be received through the IDOT website, email, phone call or in person.

   Formal complaints by outside stakeholders shall be submitted in accordance with the ADA Transition Plan. These forms can be found on the IDOT website http://idot.illinois.gov/about-idot/civil-rights/ADA-and-Accessibility#Contacts and emailed to dot.ada.complaint@illinois.gov or mailed to:

   Illinois Department of Transportation
   Bureau of Design & Environment
   Attn: ADA Policy Engineer
   2300 S. Dirksen Parkway, Room 330
   Springfield, IL 62764

All of the mentioned forms can be found on IDOT's SharePoint site under the Forms Section. The District's ADA Coordinators are available to provide more information, assistance or answer inquiries regarding the ADA/PROWAG policy implementation. You may contact the District 1 ADA Coordinators Amruta Mate, Project Manager, at (847) 705-4330, or Carlos A. Feliciano, In-House Studies Unit Head, at (847) 705-4106 or email DOT.D1.ADA@Illinois.gov .

Illinois Department of Transportation

ADA/PROWAG Project Alert

To: Amruta Mate,D1 ADA Coordinator – Programming

Date: _____

From: _____

Location/Bureau: _____

Phone/Extension: _____

Marked Route/Street Name: _____

Limits : (attach location map) _____

Project/Permit No: _____

Contract No: _____ Section No: _____

Type of Work:	☐ Reconstruction	☐ 3R/W&RS	☐ 3P/Resurfacing	☐ Other (explain)

Scope of Work:

Municipality: _____

County: ☐ Cook ☐ Kane ☐ Lake

☐ DuPage ☐ McHenry ☐ Will ☐ Various

Letting _____ Design Approval: _____

FOR ADA COORDINATOR USE ONLY

Date Uploade	
Uploaded By:	

NEW FORM FOR THE BUREAUS:

*PROGRAMMING
*DESIGN
*TRAFFIC PERMITS
*LOCAL ROADS

TO ALERT ADA COORDINATOR IN PROGRAMMING OF PLANNED ALTERATION ON STATE ROW

Illinois Department of Transportation

ADA/PROWAG Inspection Summary

Job/Permit No: _____ Date: _____

Route: _____ Inspector: _____

Limits: _____ Resident Engineer Checked: _____

Municipality: _____ County: _____

FOR ADA COORDINATOR USE ONLY

Date Uploaded into ADA Inventory: _____ Uploaded By: _____

List of facilities altered by construction improvement including curb ramps, crosswalks (marked/unmarked), Traffic Signals (APS), and/or sidewalks. For those facilities that are not compliant, attach ADA/PROWAG Inspection Sheet (D1 PD0031), ADA Construction Concurrence (BDE 5801), and supporting documentation justifying non-compliance. These must be presented by the Bureau in charge of the alteration at the next monthly FHWA/BDE Coordination Meeting. Submit the ADA/PROWAG Inspection Summary form to the D1 ADA Coordinator.

Marked Route/Street	Cross Street (for SW, include distance to nearest cross street)	Corner or Leg corner- NE/NW/SE/SW Leg –N/S/E/W	Crossing Direction (NB/SB/EB/WB)	Facility Type	ADA/PROAG Compliance		**FOR NON-COMPLIANT FACILITIES** Inspector must complete the following
				☐ Curb Ramp ☐ Crosswalk ☐ Traffic Signal ☐ Sidewalk	☐ Compliant	☐ Non-Compliant	☐ BDE 5801 Completed w/ Documentation Date Presented to FHWA/BDE:
				☐ Curb Ramp ☐ Crosswalk ☐ Traffic Signal ☐ Sidewalk	☐ Compliant	☐ Non-Compliant	☐ BDE 5801 Completed w/ Documentation Date Presented to F HWA/BDE:
				☐ Curb Ramp ☐ Crosswalk	☐ Compliant	☐ Non-ompliant	☐ BDE 5801 Completed w/ Documentation Date Presented to FHWA/BDE:
						☐ Non-ompliant	☐ BDE 5801 Completed w/ Documentation Date Presented to FHWA/BDE:
						☐ Non-ompliant	☐ BDE 5801 Completed w/ Documentation Date Presented to FHWA/BDE:

NEW FORM FOR THE BUREAUS OF:

*CONSTRUCTION
*TRAFFIC PERMITS
*LOCAL ROADS

TO CERTIFY ALTERATIONS MADE BY THEM MEET ADA/PROWAG

Illinois Department of Transportation

ADA / PROWAG Inspection Sheet

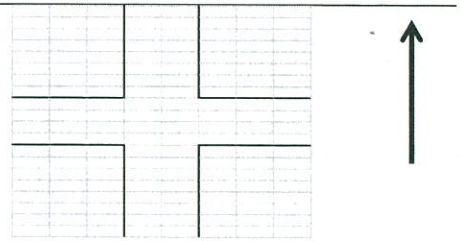
Route: _____ Date: _____

Cross Streets: _____ Inspector: _____

City/Township: _____ Checked by: _____

County: _____ Job No.: _____

ID: _____



	Curb Ramp (CR) Questions (check box for yes)	RAMP	RAMP	RAMP	RAMP	RAMP	RAMP	RAMP	RAMP
1	Is there a sidewalk leading up to the corner?	☐	☐	☐	☐	☐	☐	☐	☐
2	Does the CR have detectable warnings? If yes, answer 3, 4, & 5	☐	☐	☐	☐	☐	☐	☐	☐
3	Are the detectable warnings properly placed?	☐	☐	☐	☐	☐	☐	☐	☐
4	Are the detectable warnings in good condition?	☐	☐	☐	☐	☐	☐	☐	☐
5	Do the detectable warnings provide good color contrast?	☐	☐	☐	☐	☐	☐	☐	☐
6	If there is concrete or another walking surface adjacent to the sides of the CR, does the ramp have side flares? If yes, answer 7.	☐	☐	☐	☐	☐	☐	☐	☐
7	Indicate the maximum slope of the side flares (%)								
8	If there is a built-up CR, is it outside of the vehicle path?	☐	☐	☐	☐	☐	☐	☐	☐
9	If there is a marked crosswalk, is the CR contained within it?	☐	☐	☐	☐	☐	☐	☐	☐
10	Are all slope transitions (including gutter) flush and level (¼" max or those between ¼" & ½" beveled at a 1:2 slope)?	☐	☐	☐	☐	☐	☐	☐	☐
11	Is there a min. clear space of 4' x 4' at the bottom of the ramp within width of ped street crossing & outside parallel vehicle travel lane?	☐	☐	☐	☐	☐	☐	☐	☐
12	Is a minimum turning space provided at the top of the ramp meeting these requirements? 4' x 4' if unconstrained - 4' x 5' in direction of ramp if constrained. If a space is provided, continue to 13	☐	☐	☐	☐	☐	☐	☐	☐
13	Is the maximum cross slope of the turning space ≤ 2.00%?	☐	☐	☐	☐	☐	☐	☐	☐
14	Is the minimum width of the CR ≥ 48"? If no, answer 15	☐	☐	☐	☐	☐	☐	☐	☐
15	Record minimum width of CR (inches)								
16	Is the maximum cross slope of CR ≤ 2.00%? If no, answer 17	☐	☐	☐	☐	☐	☐	☐	☐
17	Record maximum cross slope of CR (%)								
18	Is the maximum CR running slope ≤ 8.3%? If no, answer 19	☐	☐	☐	☐	☐	☐	☐	☐
19	Record maximum CR running slope (%)								
20	Is the maximum CR gutter slope ≤ 5.00%?	☐	☐	☐	☐	☐	☐	☐	☐
21	Is the minimum width of adjacent walk ≥ 48"?	☐	☐	☐	☐	☐	☐	☐	☐

EXISTING FORM CREATED BY D1 TO INSPECT FACILITIES FOR ADA/PROWAG COMPLIANCE IN STATE ROW

	Curb Ramp (CR) Questions (check box for yes)	RAMP	RAMP	RAMP	RAMP	RAMP	RAMP	RAMP	RAMP
22	Is the maximum cross slope of adjacent walk ≤ 2.00%?	☐	☐	☐	☐	☐	☐	☐	☐
23	Is the maximum running slope of adjacent walk ≤ 5.00% or ≤ adjacent roadway grade?	☐	☐	☐	☐	☐	☐	☐	☐
24	Is the surface or any horizontal opening of the CR compliant?	☐	☐	☐	☐	☐	☐	☐	☐
Following questions to be filled out by office personnel:									
25	**Record Illinois State Curb Ramp Condition Rating (1 – 4)**								
26	**Record Illinois State Curb Ramp User Rating (1 – 4)**								

	Sidewalk Questions (check box for yes)	SIDE			
27	Is there sidewalk along this segment? If yes, answer 28–31	☐	☐	☐	☐
28	Does sidewalk meet maximum cross slope requirements?	☐	☐	☐	☐
29	Does sidewalk meet maximum running grade requirements?	☐	☐	☐	☐
30	Does sidewalk meet minimum width requirements?	☐	☐	☐	☐
31	Does the surface condition meet requirements?	☐	☐	☐	☐

	Crosswalk Questions(check box for yes)	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG	OTHER	OTHER	OTHER	OTHER
32	Is the crosswalk marked? If yes, continue to 33	☐	☐	☐	☐	☐	☐	☐	☐
33	Record minimum width of crosswalk (inches)								
34	If no yield or stop control, is the cross slope ≤ 5.00% **or** if yield or stop control, is cross slope ≤ 2.00%? If no for either, continue to 35	☐	☐	☐	☐	☐	☐	☐	☐
35	Record maximum cross slope of crosswalk (%)								
36	Is the running slope (grade) of the crosswalk ≤ 5.00%? If no, continue to 37	☐	☐	☐	☐	☐	☐	☐	☐
37	Record maximum running slope (grade) of crosswalk (%)								
38	Is the surface smooth, firm, stable, slip-resistant?	☐	☐	☐	☐	☐	☐	☐	☐

	Traffic Equipment Questions (check box for yes)	RAMP	RAMP	RAMP	RAMP	RAMP	RAMP	RAMP	RAMP
39	Are there traffic signals?	☐	☐	☐	☐	☐	☐	☐	☐
40	Are there pedestrian signals? If yes, continue to 41–44	☐	☐	☐	☐	☐	☐	☐	☐
41	Is there a ped push button within MUTCD recommended area?	☐	☐	☐	☐	☐	☐	☐	☐
42	Is APS installed?	☐	☐	☐	☐	☐	☐	☐	☐
43	Do the operable parts allow for 2" dia. use w/closed fist?	☐	☐	☐	☐	☐	☐	☐	☐
44	Does the ped push button allow for the necessary reach?	☐	☐	☐	☐	☐	☐	☐	☐

EXISTING FORM CREATED BY D1 TO INSPECT FACILITIES FOR ADA/PROWAG COMPLIANCE IN STATE ROW

Notes / Actions Required:

EXISTING FORM CREATED BY D1 TO INSPECT FACILITIES FOR ADA/PROWAG COMPLIANCE IN STATE ROW

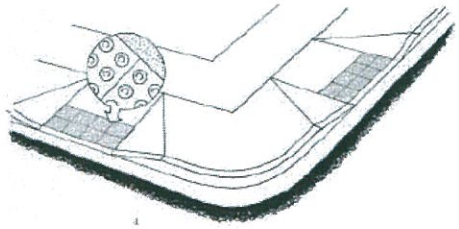
ADA/PROWAG Field Inspection Instructions

1. Is there a sidewalk leading up to the corner? If no, skip the remaining questions

Detectable Warnings

Detectable Warnings:

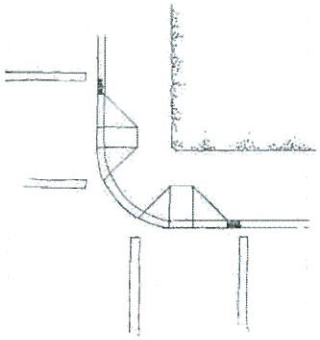
2. Are they present? If yes, answer questions 2, 3 and 4.
3. Are they properly placed?
4. Are they in good condition?
5. Do they provide good color contrast?



R305

Clear Space / Turning Space within Crosswalk

9. If there is a marked crosswalk, is the curb ramp contained within the marked crosswalk?

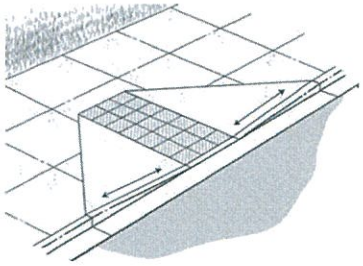


R304.3.1

Side Flares

6. If there is concrete or another walking surface adjacent to the sides of the ramp, does the ramp have side flares?

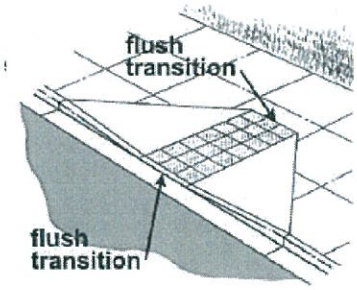
7. If yes, indicate the maximum slope of the flares. If no, skip this question.



R304.2.3

Flush Transitions

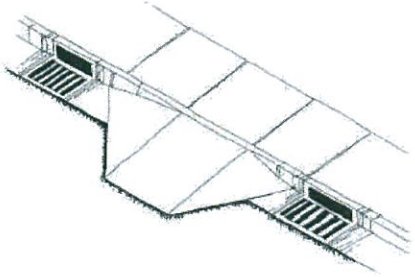
10. Are all slope transitions (including back of gutter) flush and level (¼" max or those between ¼" & ½" beveled at a 1:2 slope)?



R302.7.2

Clear Space / Turning Space Built-up Curb Ramps

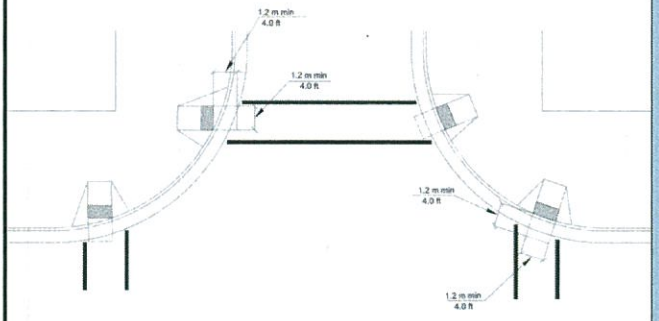
8 If there is a built-up curb ramp, is it outside of the vehicle path?



R304.3.1

Clear Space / Turning Space

11. Is there a min. clear space of 4' x 4' at the bottom of the ramp within width of pedestrian street crossing & outside parallel vehicle travel lane?



R304.3.1

EXISTING FORM CREATED BY D1 TO INSPECT FACILITIES FOR ADA/PROWAG COMPLIANCE IN STATE ROW

ADA/PROWAG Field Inspection Instructions

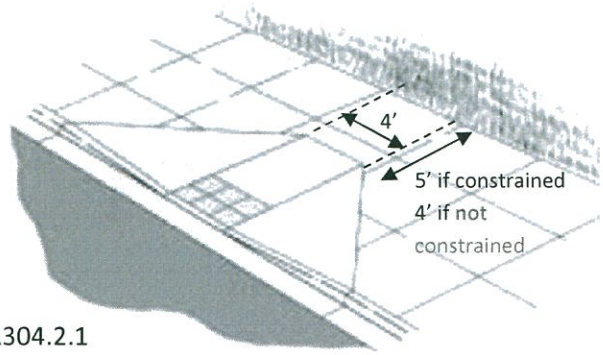
Turning Space

12. Is a minimum turning space provided at the top of the ramp meeting these requirements?

4' x 4' if unconstrained

4' x 5' in direction of ramp if constrained

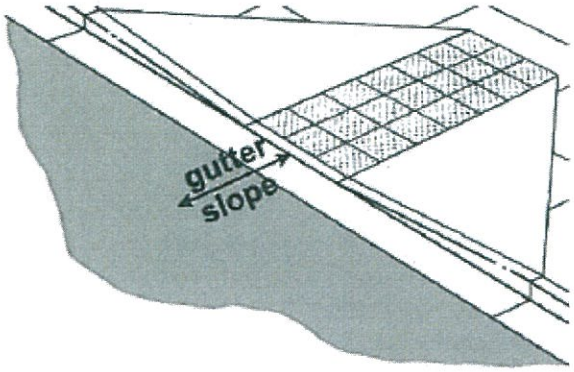
13. Is the maximum cross slope of the turning space ≤ 2.00%?



R304.2.1

Gutter Slope

20. Is the maximum CR gutter slope ≤ 5.00%?

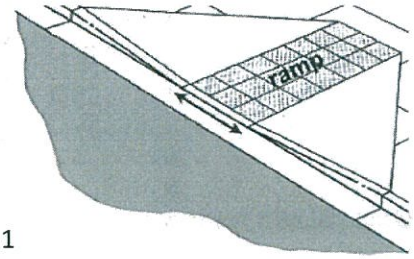


R304.5.4

Curb Ramp Width

14. Is the minimum width of the CR, less side flares/curbs ≥ 48"? If no, answer 15

15. Record the min. width (inches)

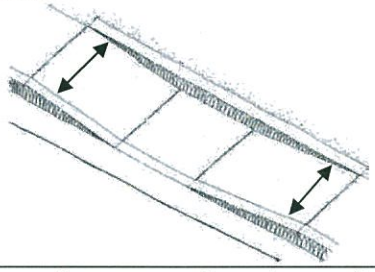


R304.5.1

Adjacent Walk Width & Cross Slope

21. Is the minimum width of adjacent walk ≥ 48"?

22. Is the maximum cross slope of adjacent walk ≤ 2.00%?

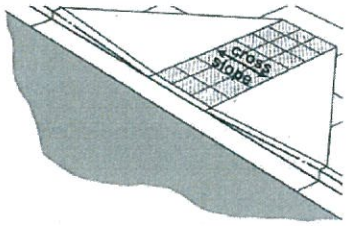


R302.6

Curb Ramp Cross Slope

16. Is the maximum cross slope of CR ≤ 2.00%? If no, answer 17.

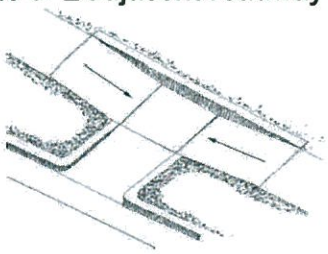
17. Record the max. cross slope (%)



R302.6

Adjacent Walk Running Slope

23. Is the maximum running slope of adjacent walk ≤ 5.00% or ≤ adjacent roadway grade?

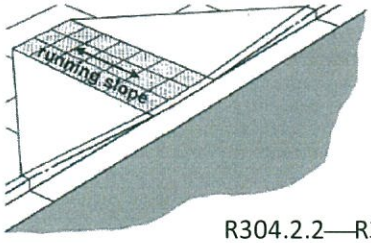


R302.5

Curb Ramp Running Slope

18. Is the maximum CR running slope ≤ 8.3%? If no, answer 19.

19. Record max. CR running slope (%)



R304.2.2—R304.3.2—R304.4.1

Horizontal Openings Noncompliant surfaces

24. Is the surface or any horizontal opening of the CR compliant?

Horizontal openings must not be greater than ½" in width and must be perpendicular to travel. The example shown here would be noncompliant.

R302.7

Printed 5/4/2015

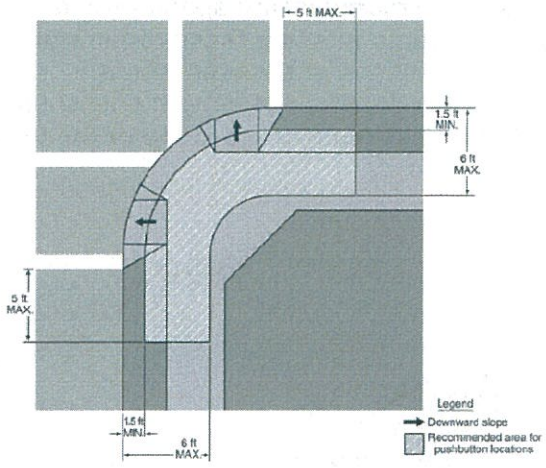
EXISTING FORM CREATED BY D1 TO INSPECT FACILITIES FOR ADA/PROWAG COMPLIANCE IN STATE ROW

D1 PD0031 (Rev. 12/08/14)

ADA/PROWAG Field Inspection Instructions

Pedestrian Push Button Location

41. If there is a pedestrian push button, is it within the area recommended by MUTCD?



Pedestrian Reach

44. Does the ped push button allow for the necessary reach?

Figure R406.3 Unobstructed Side Reach

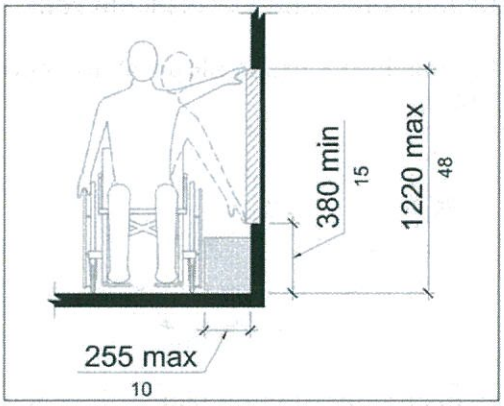
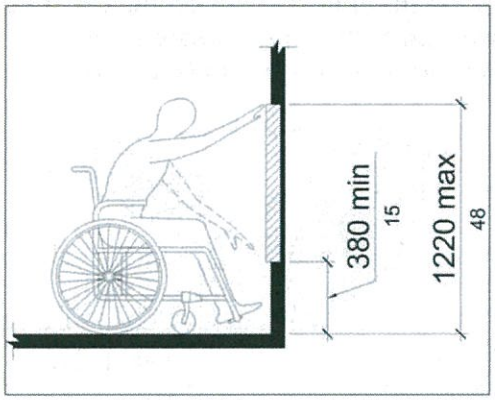


Figure R406.2 Unobstructed Forward Reach



Note: All reference sections shown are from the Proposed Guidelines for Pedestrian Facilities in the Public Right-of-Way, accessed January 2014.

http://www.access-board.gov/guidelines-and-standards/streets-sidewalks/public-rights-of-way/proposed-rights-of-way-guidelines

EXISTING FORM CREATED BY D1 TO INSPECT FACILITIES FOR ADA/PROWAG COMPLIANCE IN STATE ROW

ADA/PROWAG Field Inspection Instructions

	Curb Ramp (CR) Questions	Standard	Notes
1	Is there a sidewalk leading up to the corner?		If no, skip the remaining questions for that corner
2	Does the CR have detectable warnings? If yes, answer 3, 4, & 5	YES	If no, skip questions 3, 4 & 5
3	Are the detectable warnings properly placed?	YES	
4	Are the detectable warnings in good condition?	YES	
5	Do the detectable warnings provide color contrast?	YES	
6	If there is concrete or another walking surface adjacent to the sides of the CR, does the ramp have side flares? If yes, answer 7.	YES	If no, skip question 7
7	Indicate the maximum slope of the side flares (%)	10%	
8	If there is a built-up CR, is it outside of the vehicle path?	YES	
9	If there is a marked crosswalk, is the CR contained within the marked crosswalk?	YES	
10	Are all slope transitions (including back of gutter) flush and level (¼" max or those between ¼" & ½" beveled at a 1:2 slope)?	YES	
11	Is there a min. clear space of 4' x 4' at the bottom of the ramp within width of pedestrian street crossing & outside parallel vehicle travel lane?	YES	
12	Is a minimum turning space provided at the top of the ramp meeting these requirements? 4' x 4' if unconstrained - 4' x 5' in direction of ramp if constrained. If a space is provided, continue to 13	YES	
13	Is the maximum cross slope of the turning space ≤ 2.00%?	YES	
14	Is the minimum width of the CR ≥ 48"? If no, answer 15	YES	
15	Record minimum width of CR (inches)		
16	Is the maximum cross slope of CR ≤ 2.00%? If no, answer 17	YES	
17	Record maximum cross slope of CR (%)		
18	Is the maximum CR running slope ≤ 8.3%? If no, answer 19	YES	
19	Record maximum CR running slope (%)		
20	Is the maximum CR gutter slope ≤ 5.00%?	YES	
21	Is the minimum width of adjacent walk ≥ 48"?	YES	
22	Is the maximum cross slope of adjacent walk ≤ 2.00%?	YES	
23	Is the maximum running slope of adjacent walk ≤ 5.00% or ≤ adjacent roadway grade?	YES	
24	Is the surface or any horizontal opening of the CR compliant?	YES	

25 Record Illinois State Curb Ramp Condition Rating. To be completed by staff member assigned to process form.

Condition Rating	
Rating	**Description**
1	Compliant curb ramp
2	Mostly compliant curb ramp (one or two elements of the curb ramp are in violation)
3	Mostly non-compliant curb ramp (more than two elements of the curb ramp are in violation)
4	Missing curb ramp where warranted

EXISTING FORM CREATED BY D1 TO INSPECT FACILITIES FOR ADA/PROWAG COMPLIANCE IN STATE ROW

ADA/PROWAG Field Inspection Instructions

26 Record Illinois State Curb Ramp User Rating. To be completed by staff member assigned to process form.

User Rating	
Level	**Description**
1	Serving industrial areas, single family residential areas, and other areas not classified as high priority
2	Serving facilities such as shopping malls, supermarkets, strip retail centers, major employment sites and multi-housing complexes
3	Serving facilities such as public service facilities, transportation hubs, hospitals, rehabilitation facilities, schools, public housing, parks, and areas with a high concentration of disabled citizens
4	Serving areas where a specific accessibility request or need has been identified by the disabled community

	Sidewalk Questions	Standard	Notes
27	Is there sidewalk along this segment? If yes, answer 28–31	YES/NO	If yes, , answer 28–31
28	Does sidewalk meet maximum cross slope requirements?	YES	
29	Does sidewalk meet maximum running grade requirements?	YES	
30	Does sidewalk meet minimum width requirements?	YES	
31	Does the surface condition meet requirements?	YES	

	Crosswalk Questions	Standard	Notes
32	Is the crosswalk marked? If yes, continue to 33	YES/NO	If yes, continue to question 33
33	Record minimum width of crosswalk (inches)		
34	If no yield or stop control, is the cross slope ≤ 5.00% **or** if yield or stop control, is cross slope ≤ 2.00%? If no for either, continue to 35	YES	If no, continue to question 35
35	Record maximum cross slope of crosswalk (%)		
36	Is the running slope (grade) of the crosswalk ≤ 5.00%? If no, continue to 37	YES	If no, continue to question 37
37	Record maximum running slope (grade) of crosswalk (%)		
38	Is the surface smooth, firm, stable, slip-resistant?	YES	

	Traffic Equipment Questions	Standard	Notes
39	Are there traffic signals?	YES/NO	If yes, continue to question 40
40	Are there pedestrian signals? If yes, continue to 41–44	YES/NO	If yes, continue to questions 41-44
41	Is there a ped push button within MUTCD recommended area?	YES	
42	Is APS installed?	YES	
43	Do the operable parts allow for 2" dia. use w/closed fist?	YES	
44	Does the ped push button allow for the necessary reach?	YES	

EXISTING FORM CREATED BY D1 TO INSPECT FACILITIES FOR ADA/PROWAG COMPLIANCE IN STATE ROW

Illinois Department of Transportation

ADA Statement of Maximum Extent Practicable

Route		**Street**		**Marked**	
Contract #		**State Job #**		**Section**	
County		**Municipality**			
Project Limits					
Project Length					
Estimate of Cost					
Type of Project (e.g. SMART, 3R, Reconstruction)					
Brief Project Description					

DOCUMENTATION OF MAXIMUM EXTENT PRACTICABLE (MEP)

Location(s) Where MEP is Requested			
Design Element for Which MEP is Requested and Proposed Element Value			
Design Element Policy Value			
Coordination Meeting Date			
Prepared by		**Date**	

Specify and Explain Reason(s) why Full Compliance is Infeasible

☐ Structural (e.g. bridge beams, buildings, basements, foundations)

☐ Historic Preservation (e.g. historic buildings, districts, monuments)

☐ Topography (e.g. steep existing road grade exceeds ADA compliant maximum)

☐ Utilities (Project scope would not otherwise require utility relocation)

☐ Right-of-Way (Project scope would not otherwise require R.O.W.)

☐ Other

Discuss Alternatives Considered (Attach supporting documentation, e.g. plan and profile sheets, photos)

APPROVAL/DISAPPROVAL

BDE Approval Date		BDE Disapproval Date	
		BDE Comments on Disapproval	
DOH Approval Date		DOH Disapproval Date	
		DOH Comments on Disapproval	
FHWA Approval Date		FHWA Disapproval Date	

EXISTING FORM BY BDE TO DOCUMENT WAIVER REQUESTS TO FHWA/BDE IN THE PLANNING/DESIGN PHASE

Illinois Department of Transportation

ADA Construction Concurrence

For pedestrian facilities that cannot be constructed fully compliant and for which there is no approved BDE 3101 ADA Statement of Maximum Extent Practicable, check off area(s) of non-compliance, discuss barriers to compliance and proposed construction to achieve ADA compliance to the maximum extent practicable. Return the form to the district ADA coordinator for concurrence on proposed construction.

Job Number

Contract Number

Route

Section

Intersection/Station

Quadrant

- ☐ Curb ramp running slope
- ☐ Curb ramp width
- ☐ Landing/turning space dimensions
- ☐ Truncated dome orientation
- ☐ Pedestrian push button reach range
- ☐ Curb ramp cross slope
- ☐ Gutter counter slope
- ☐ Landing/turning space cross slope
- ☐ Grade break orientation
- ☐ Other

Discussion of barrier(s) to full ADA compliance and proposed maximum extent practicable design

EXISTING FORM BY BDE TO DOCUMENT WAIVER REQUESTS TO FHWA/BDE AFTER LETTING DURING CONSTRUCTION

Resident Engineer/Technician

Date submitted

District ADA Coordinator

Date concurred

D1 ADA Inventory Efforts

Inventory Efforts

Cost - ~$2 million in State Engineering Dollars

Miles: 2,973 miles (~$670/mile)

Firms – 25 firms (7 under D1 ADA Coordinator)

Contracts – 13 contracts

Schedule:

- November 2013 – BDE Mandates Inventory
  - *March 2014 – D1 Submit Partial Altered Inventory*
- September 2014 – D1 Inventory Collection Starts & completed by February 2015
  - *March 2015 – D1 Submits Full Inventory*
- May 2015 – Begin QA of Inventory
- April/May 2015 – D1 Staff ADA/PROWAG Training & Initiation of Inventory Updates

D1 ADA Inventory Status

Inventory Status

- **Crosswalks**
  - Total Facilities – 28,494 segments (21,942 were marked)
  - Compliant Facilities – 11,826 (41.5% Compliance)
- **Curb Ramps:**
  - Total Facilities – 65,093 ramps
  - Compliant Facilities – 2,257 (3.5% Compliance, 91% in Chicago)
- **Audible Pedestrian Signals (APS)**
  - Total Facilities – 20,793 (73.6% {15,300} w/ Ped Heads/Buttons)
  - Compliant – 100 (0.5% Compliance)
- **Sidewalks**:
  - Total Facilities – 48,607 segments (0 State maintained)
  - Compliant – N/A
- **Weigh Stations**
  - Total Facilities – 12
  - Compliant – N/A, TO BE INSPECTED BY CO OPERATIONS
- **Rest Stops**
  - Total Facilities – 1
  - Compliant – N/A, TO BE INSPECTED BY CO OPERATIONS

D1 ADA – Addressing Compliance

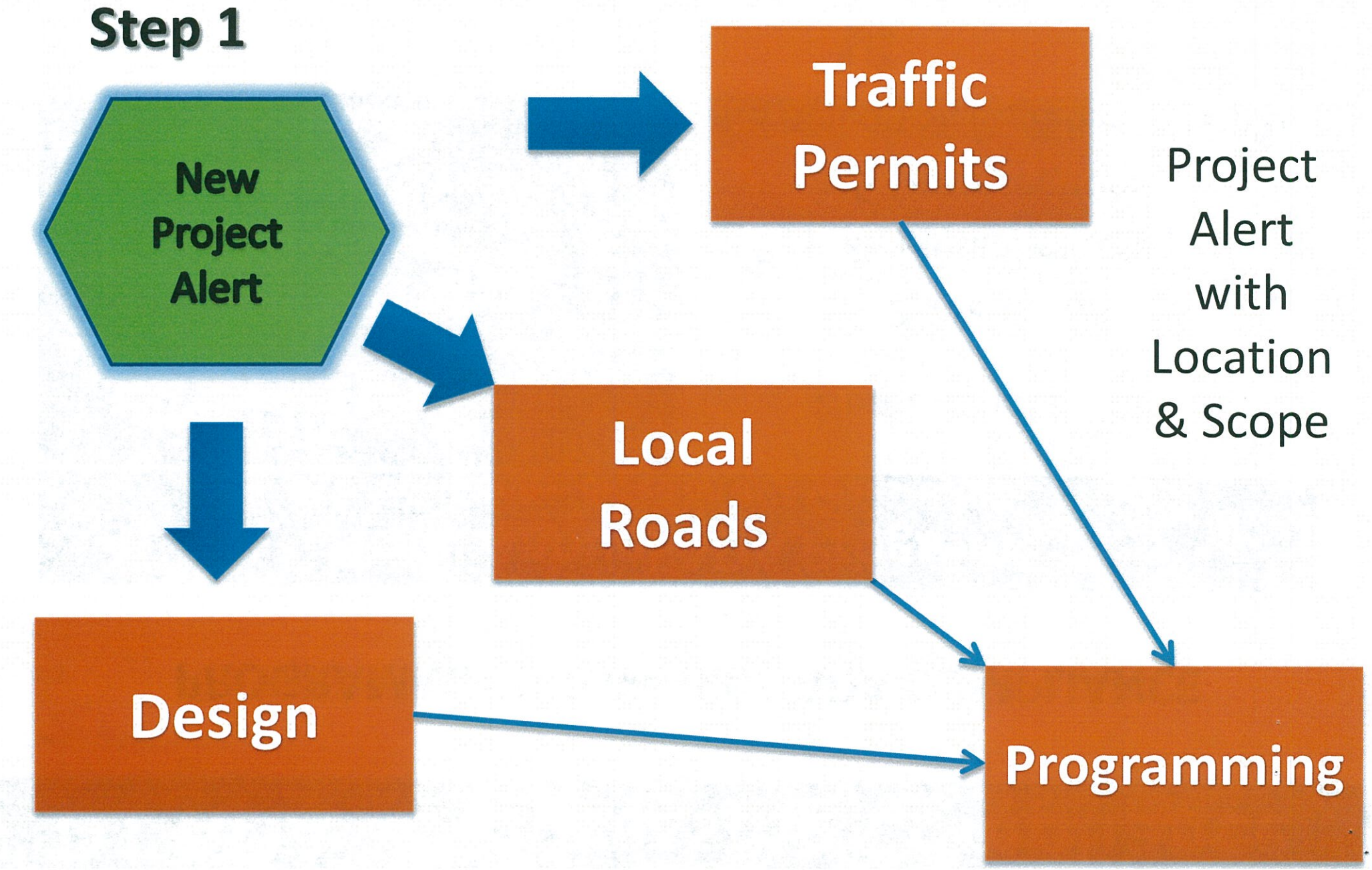
PROGRAMMING TOWARDS ADA COMPLIANCE

Total Annual ADA Program Estimate only—Based on a 25 year schedule	
Facility Type	Number of Facilities
Curb Ramps	2,458 ramps
Crosswalks[1]	294 intersections
Pedestrian Signals	57 intersections
Sidewalks[2]	4.8 million SF (1,458 segments)

[1]Note: this represents an equiv. number as not all non-compliant crosswalks are in the same intersection.

[2]Note: The agency responsible for bringing sidewalks in the State ROW into compliance has not yet been determined.

D1 ADA Inventory Maintenance



D1 ADA Inventory Maintenance

Proposed Process

- Step 1 – **Project Alert** (new form): Bureaus will be required to submit a project alert whenever there is an improvement that will potentially alter a State roadway

  *Programming *Design *Local Roads *Traffic Operations

- Step 2 – **Inspection Sheet** (D1 PD0031): Bureaus altering facilities will inspect each facility altered & keep in their records

  *Local Roads *Traffic Operations *Construction

- Step 3 – **Inspection Summary** (new form): Bureaus will provide a summary of inspections and compliance to ADA Coordinators. Any non-compliance:

  *Local Roads *Traffic Operations *Construction

  - Step 3A/B – Fill out **ADA Statement of Maximum Extent Practicable** (BDE3101) before letting or **ADA Construction Concurrence** (BDE 5801) if after letting (i.e. Construction)& present at a monthly BDE/FHWA Coordination Meeting for approval from BDE/FHWA

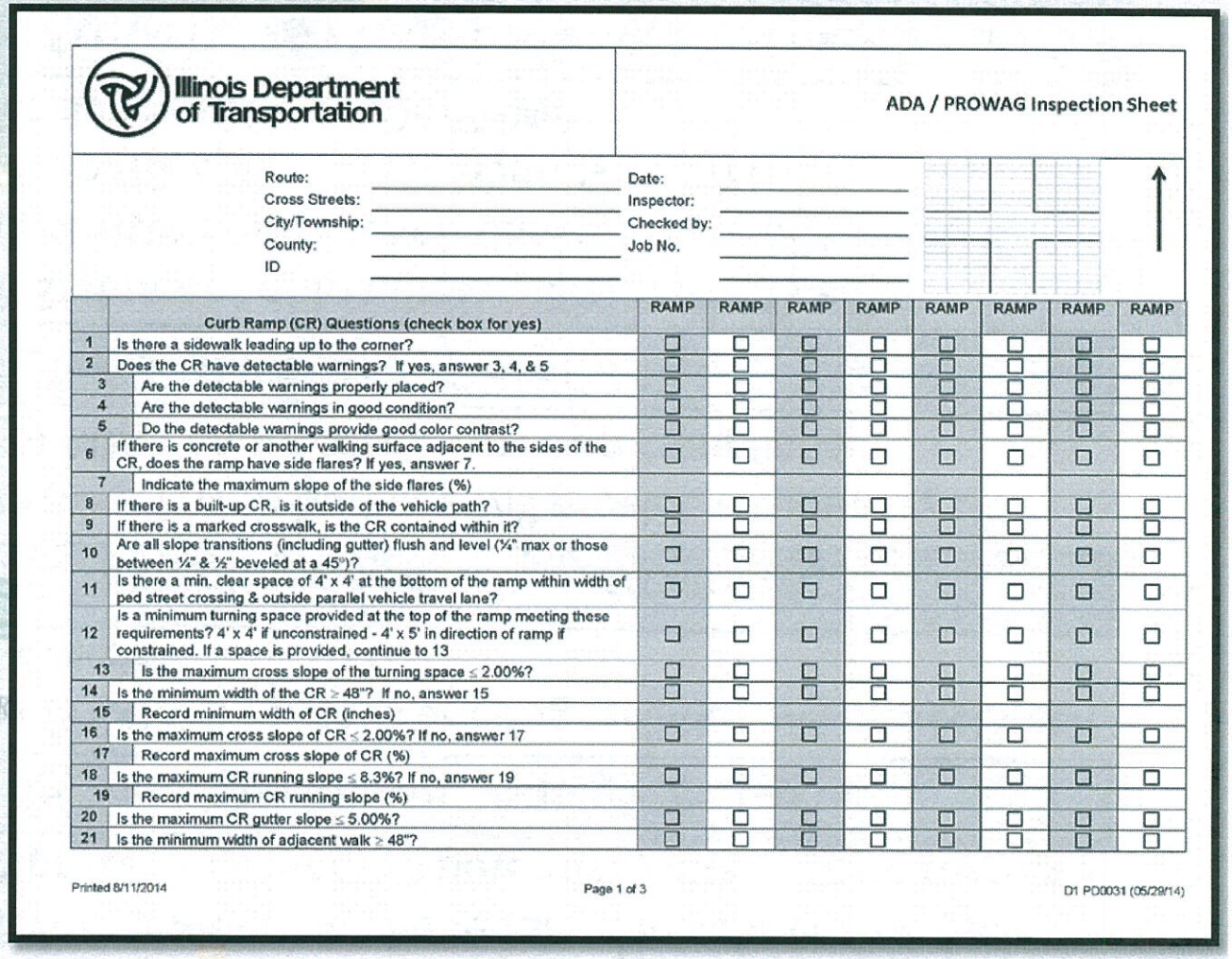
  *Programming *Design *Local Roads *Traffic Operations *Construction

- Step 4 – ADA Inventory is updated by the Bureau of Programming noting compliance & report annually to BDE/FHWA.

  *Programming

D1 ADA Inventory Maintenance

- **Step 2**
  - Inspection Sheet Form (D1 PD0031) & Guidance
  - Mobile application
  - Web-based



Illinois Department of Transportation

ADA / PROWAG Inspection Sheet

Route: _____ Date: _____
Cross Streets: _____ Inspector: _____
City/Township: _____ Checked by: _____
County: _____ Job No. _____
ID _____

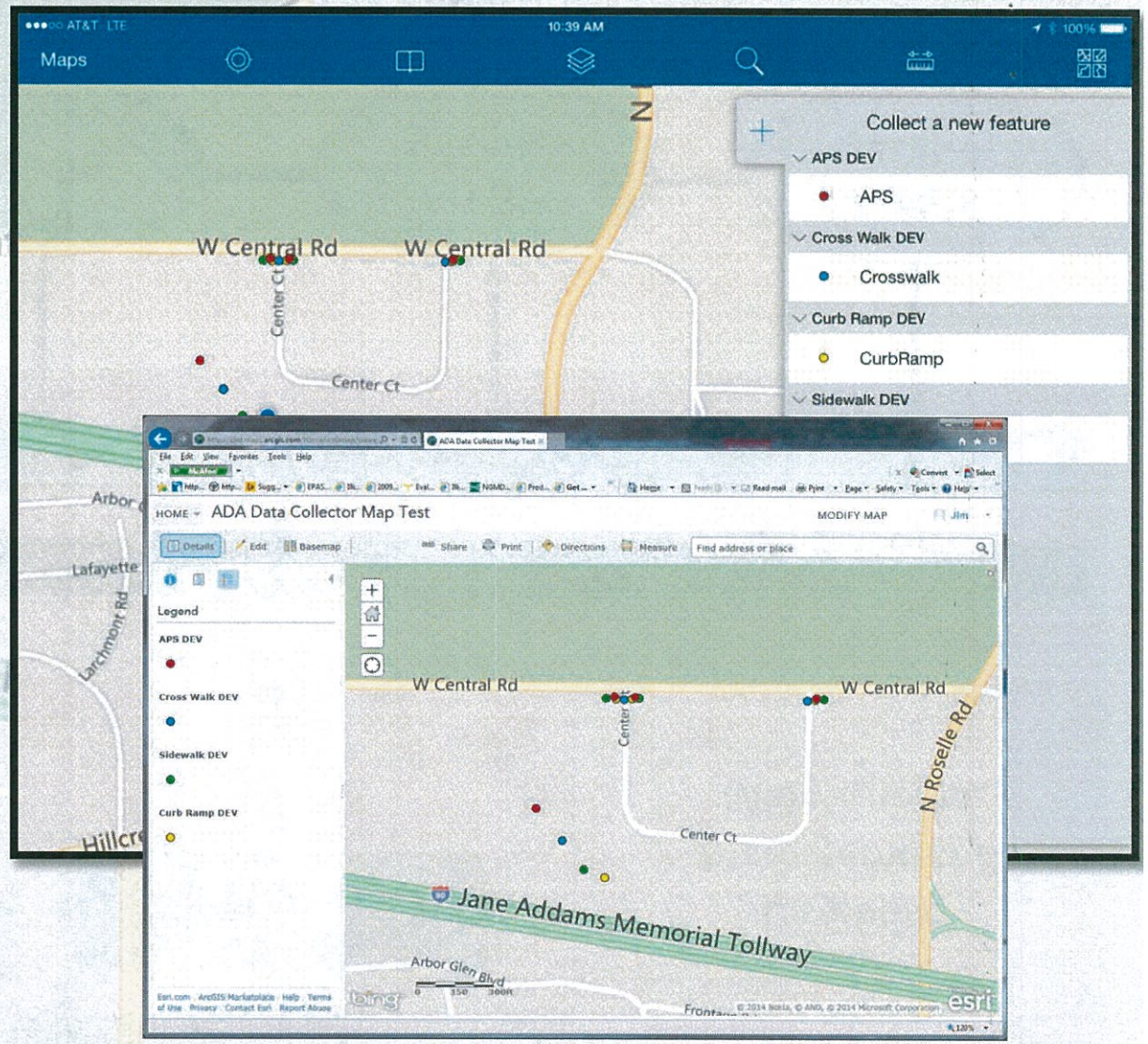
	Curb Ramp (CR) Questions (check box for yes)	RAMP	RAMP	RAMP	RAMP	RAMP	RAMP	RAMP	RAMP
1	Is there a sidewalk leading up to the corner?	☐	☐	☐	☐	☐	☐	☐	☐
2	Does the CR have detectable warnings? If yes, answer 3, 4, & 5	☐	☐	☐	☐	☐	☐	☐	☐
3	Are the detectable warnings properly placed?	☐	☐	☐	☐	☐	☐	☐	☐
4	Are the detectable warnings in good condition?	☐	☐	☐	☐	☐	☐	☐	☐
5	Do the detectable warnings provide good color contrast?	☐	☐	☐	☐	☐	☐	☐	☐
6	If there is concrete or another walking surface adjacent to the sides of the CR, does the ramp have side flares? If yes, answer 7.	☐	☐	☐	☐	☐	☐	☐	☐
7	Indicate the maximum slope of the side flares (%)								
8	If there is a built-up CR, is it outside of the vehicle path?	☐	☐	☐	☐	☐	☐	☐	☐
9	If there is a marked crosswalk, is the CR contained within it?	☐	☐	☐	☐	☐	☐	☐	☐
10	Are all slope transitions (including gutter) flush and level (¼" max or those between ¼" & ½" beveled at a 45°)?	☐	☐	☐	☐	☐	☐	☐	☐
11	Is there a min. clear space of 4' x 4' at the bottom of the ramp within width of ped street crossing & outside parallel vehicle travel lane?	☐	☐	☐	☐	☐	☐	☐	☐
12	Is a minimum turning space provided at the top of the ramp meeting these requirements? 4' x 4' if unconstrained - 4' x 5' in direction of ramp if constrained. If a space is provided, continue to 13	☐	☐	☐	☐	☐	☐	☐	☐
13	Is the maximum cross slope of the turning space ≤ 2.00%?	☐	☐	☐	☐	☐	☐	☐	☐
14	Is the minimum width of the CR ≥ 48"? If no, answer 15	☐	☐	☐	☐	☐	☐	☐	☐
15	Record minimum width of CR (inches)								
16	Is the maximum cross slope of CR ≤ 2.00%? If no, answer 17	☐	☐	☐	☐	☐	☐	☐	☐
17	Record maximum cross slope of CR (%)								
18	Is the maximum CR running slope ≤ 8.3%? If no, answer 19	☐	☐	☐	☐	☐	☐	☐	☐
19	Record maximum CR running slope (%)								
20	Is the maximum CR gutter slope ≤ 5.00%?	☐	☐	☐	☐	☐	☐	☐	☐
21	Is the minimum width of adjacent walk ≥ 48"?	☐	☐	☐	☐	☐	☐	☐	☐

Printed 8/11/2014 Page 1 of 3 D1 PD0031 (05/29/14)

Collection Format & Instructions

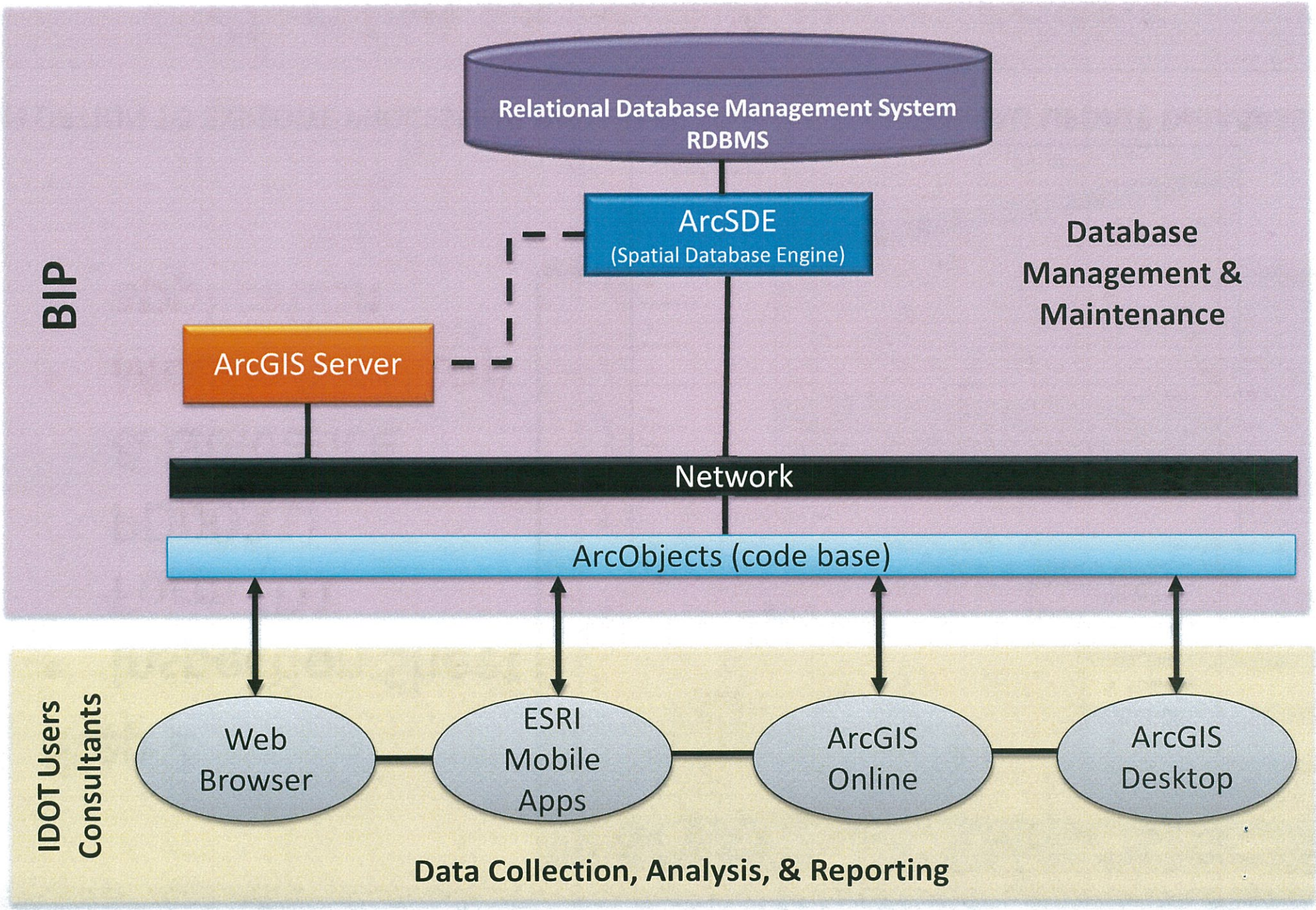
D1 ADA Inventory Maintenance

- **Step 2**
  - Inspection Sheet Form (D1 PD0031) & Guidance
  - Mobile/Desktop application



AN OPTION TO EXPEDITE PROCESSING WOULD BE TO HAVE EACH BUREAU UPDATE DATABASE

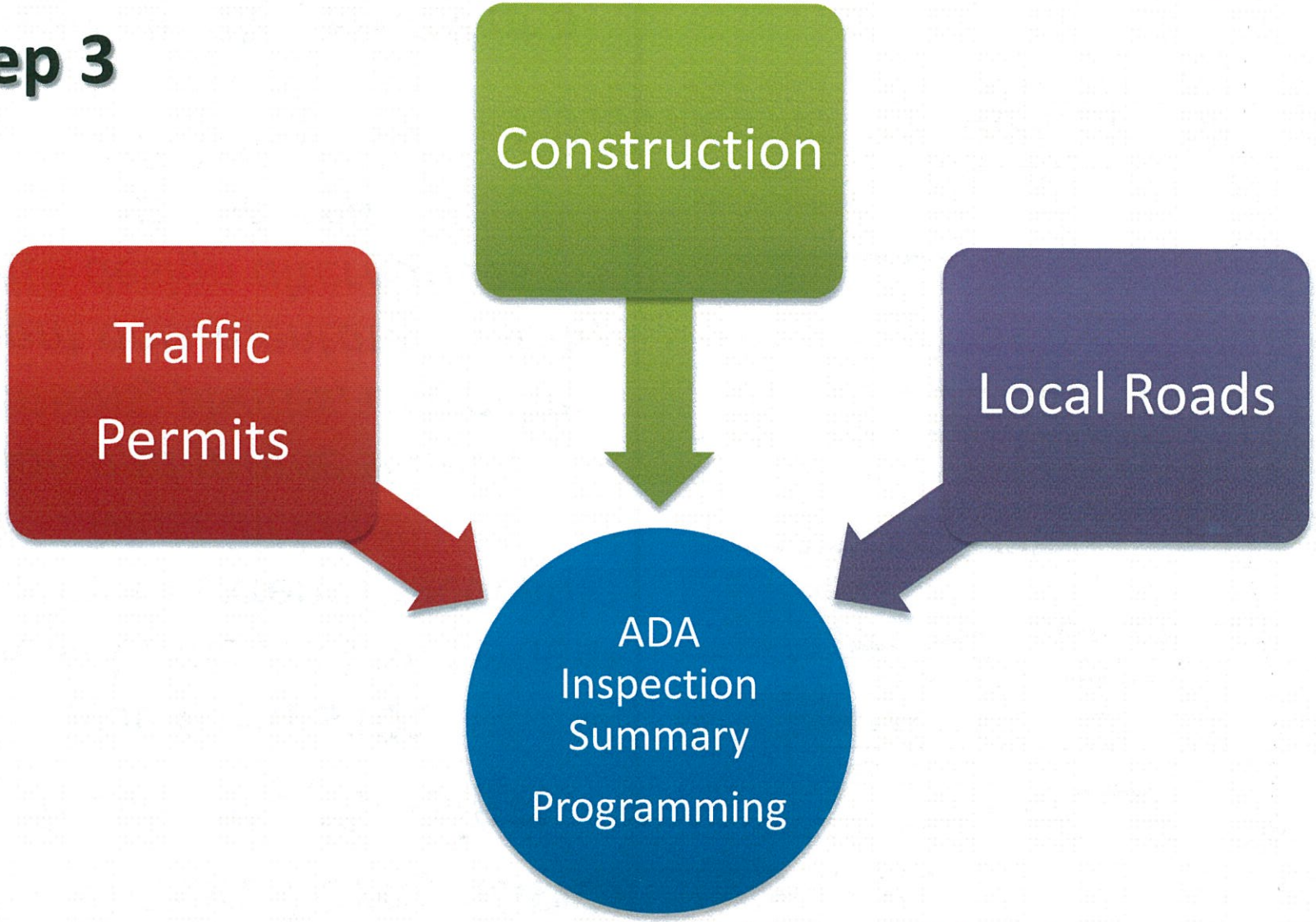
Collection Format & Instructions



ArcGIS Structure – General Overview

D1 ADA Inventory Maintenance

Step 3



All alterations made to pedestrian facilities will be documented using Inspection Form and an Inspection Summary submitted to Programming to update the ADA Inventory

D1 ADA Inventory Maintenance

Step 3A – Non Compliance during Planning/Design

BDE Form 3101

Bureau submits ADA Statement of Maximum Extent Practicable

Must include:

plan and profile sheets, elevations, photos, any other relevant documentation along with design alternatives considered

BDE 31-8.04 (c)

&

***Presents to BDE/FHWA** at a Coordination Meeting for approval*

Illinois Department of Transportation

ADA Statement of Maximum Extent Practicable

Route		Street		Marked	
Contract #		State Job #		Section	
County		Municipality			
Project Limits					
Project Length					
Estimate of Cost					
Type of Project (e.g. SMART, 3R, Reconstruction)					
Brief Project Description					

DOCUMENTATION OF MAXIMUM EXTENT PRACTICABLE (MEP)

Location(s) Where MEP is Requested			
Design Element for Which MEP is Requested and Proposed Element Value			
Design Element Policy Value			
Coordination Meeting Date			
Prepared by		Date	

Specify and Explain Reason(s) why Full Compliance is Infeasible

☐ Structural (e.g. bridge beams, buildings, basements, foundations)

☐ Historic Preservation (e.g. historic buildings, districts, monuments)

☐ Topography (e.g. steep existing road grade exceeds ADA compliant maximum)

☐ Utilities (Project scope would not otherwise require utility relocation)

☐ Right-of-Way (Project scope would not otherwise require R.O.W.)

☐ Other

Discuss Alternatives Considered (Attach supporting documentation, e.g. plan and profile sheets, photos)

APPROVAL/DISAPPROVAL

BDE Approval Date		BDE Disapproval Date	
		BDE Comments on Disapproval	
DOH Approval Date		DOH Disapproval Date	
		DOH Comments on Disapproval	
FHWA Approval Date		FHWA Disapproval Date	

Printed 4/6/2015 Page 1 of 1 BDE 3101 (01/22/14)

D1 ADA Inventory Maintenance

Step 3B – Non Compliance during Construction

BDE Form 5801

Bureau submits to ADA Coordinator the ADA Construction Concurrence

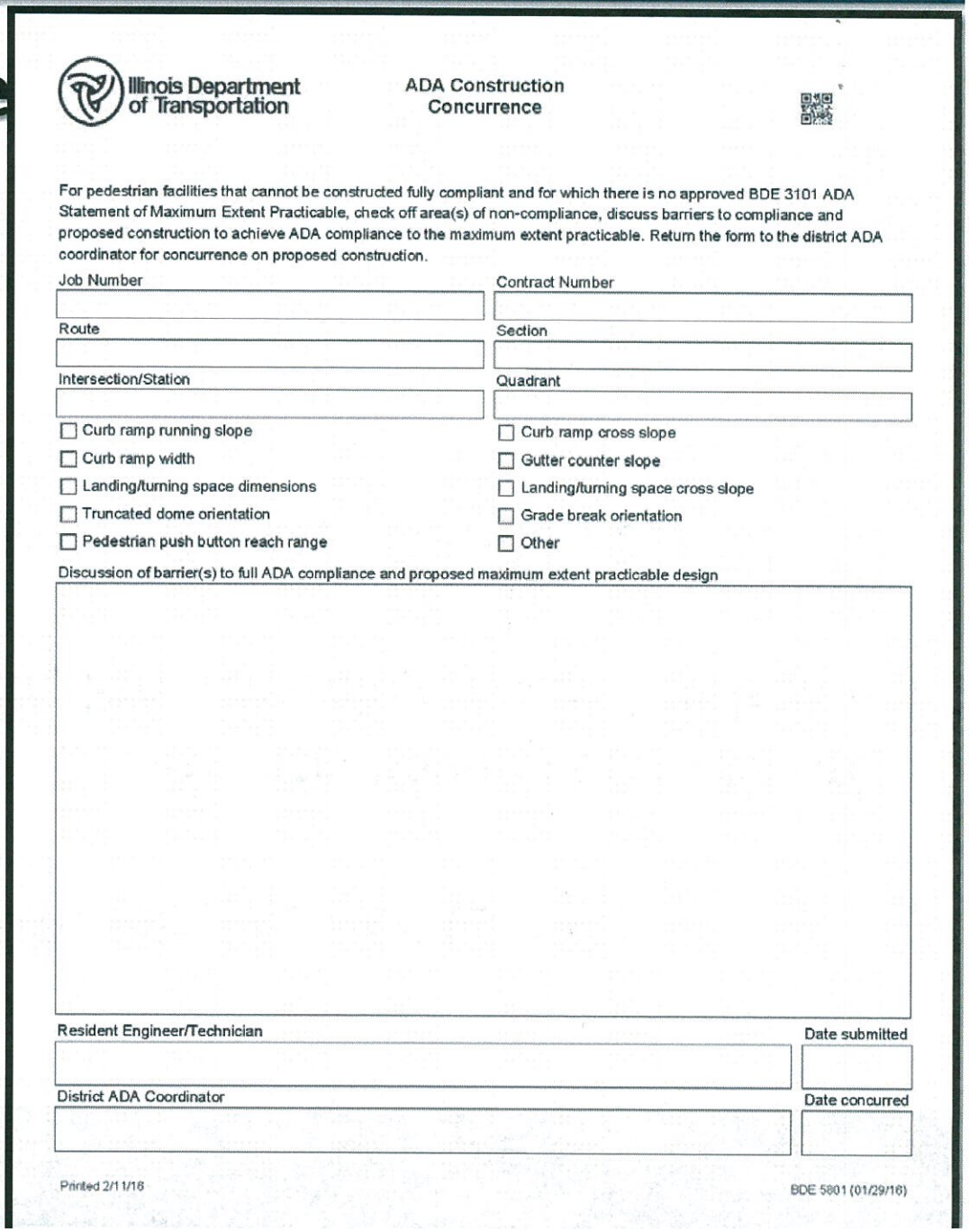
Must include:

plan and profile sheets, elevations, photos, any other relevant documentation along with design alternatives considered

BDE 31-8.04 (c)

&

***Presents to BDE/FHWA** at a Coordination Meeting for approval*



Illinois Department of Transportation

ADA Construction Concurrence

For pedestrian facilities that cannot be constructed fully compliant and for which there is no approved BDE 3101 ADA Statement of Maximum Extent Practicable, check off area(s) of non-compliance, discuss barriers to compliance and proposed construction to achieve ADA compliance to the maximum extent practicable. Return the form to the district ADA coordinator for concurrence on proposed construction.

Job Number | Contract Number

Route | Section

Intersection/Station | Quadrant

- ☐ Curb ramp running slope
- ☐ Curb ramp width
- ☐ Landing/turning space dimensions
- ☐ Truncated dome orientation
- ☐ Pedestrian push button reach range
- ☐ Curb ramp cross slope
- ☐ Gutter counter slope
- ☐ Landing/turning space cross slope
- ☐ Grade break orientation
- ☐ Other

Discussion of barrier(s) to full ADA compliance and proposed maximum extent practicable design

Resident Engineer/Technician | Date submitted

District ADA Coordinator | Date concurred

Printed 2/11/16

BDE 5801 (01/29/16)

D1 ADA Training

ADA Training

Programming developing an ADA Training geared to IDOT Engineering Staff:

- Planning to schedule it in the Fall. Currently have over 200 staff members signed up from Traffic, Programming, Local Roads and Construction
- Training would be ideal to inform staff of what their new responsibilities would be

D1 ADA Transition Plan

ADA Transition Plan

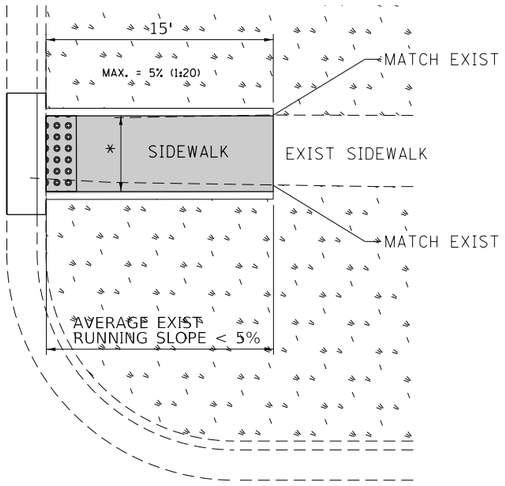
- The ADA Transition Plan is finaled and available in the IDOT website.
- It was submitted and accepted by the FHWA (26 States have been accepted so far).
- Mandates Districts to address 1/25th of their inventory on a yearly basis

Accomplishments vs. Goals

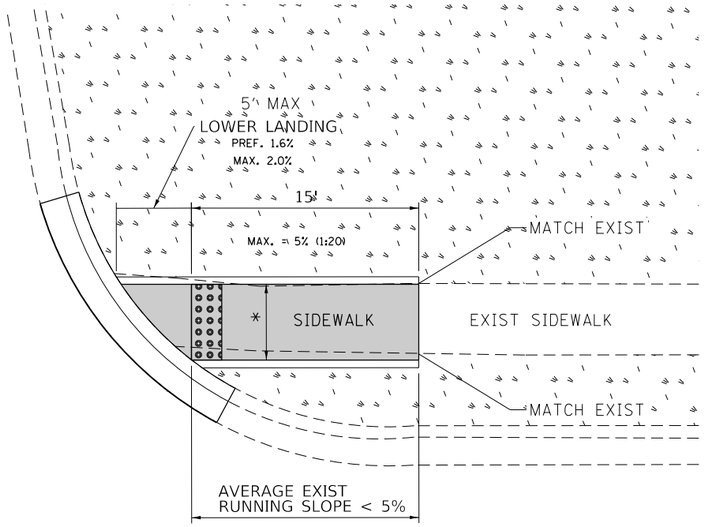
- OP&P 2016 – Requires PD to track SW, CR, APS, XW for each PPS entry to report in the For The Record yearly document. Will look to Districts to fill in areas where goals are not met.
- BDE – Accomplishment is physically bringing elements to compliance not programming them. Hence the 1/25th Compliance Strategic Goal and the ADA Transition Plan 1/25th Requirement are two different things that shouldn't be confused.

ADA DETAIL FOR SINGLE PERPENDICULAR CURB RAMPS W/ EXIST. 5% OR LESS RUN. SLOPE

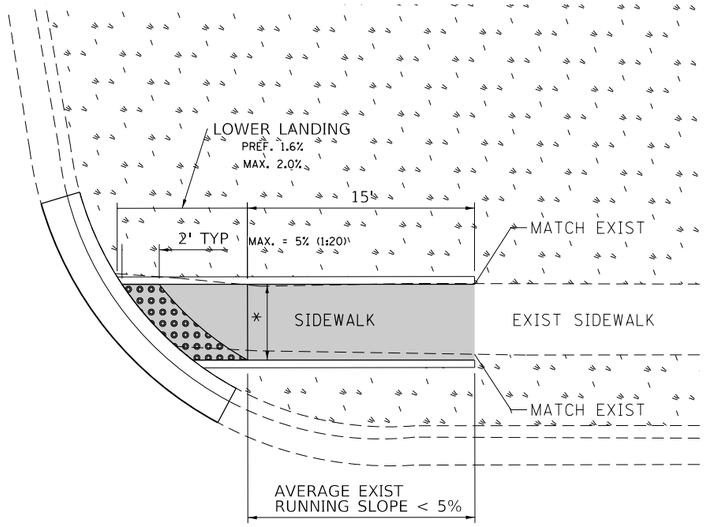
PD-01A



PD-01B



PD-01C



DESIGNER NOTES:

1) ALL CROSS SLOPES ARE PREFERRED 1.6% (1:64), MAXIMUM 2% (1:50).
2) SIDEWALK REALIGNMENT WILL REQUIRE DETAILED DESIGN.
3) AREAS SURROUNDED BY PCC/ASPHALT, BUILDINGS, OR ARE NEAR TO DRIVEWAYS, REALIGNED SIDEWALK, UTILITY AND SIGNAL POLES, OR WHEN PRIVATE SIDEWALK TIES IN, WILL REQUIRE DETAILED SURVEY AND DESIGN.
4) ALL BRICK CORNERS WILL REQUIRE SUPERVISOR APPROVAL BEFORE USING PROJECT DETAILS

LEGEND

PROPOSED SIDE CURB

EXIST. GRASS

PROPOSED SIDEWALK

DETECTABLE WARNINGS

CONSTRUCTION NOTES:

1) ALL CROSS SLOPES ARE PREFERRED 1.6% (1:64), MAXIMUM 2% (1:50) EXCEPT WHEN TRANSITIONING TO EXISTING SIDEWALK

* MATCH EXISTING SIDEWALK WIDTH

FILE NAME = S:\WP\PLANPREP\SQUAD_1\Des_RL\Typical ADA details\Typical-ADA-sht-plan.dgn	USER NAME = ledezmarm	DESIGNED - --- --/--/----	REVISED -
		DRAWN - RL 11/12/2019	REVISED -
	PLOT SCALE = 10.0000 ' / in.	CHECKED -	REVISED -
Default	PLOT DATE = 11/12/2019	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

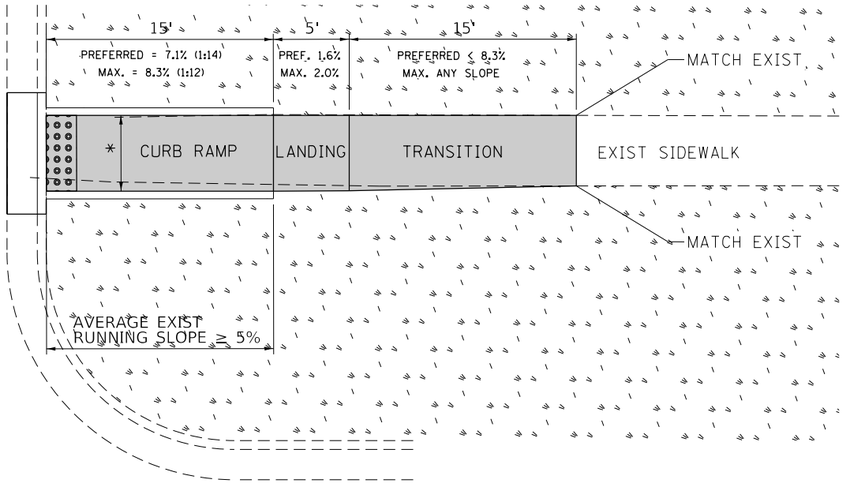
PROJECT DETAIL FOR SINGLE PERPENDICULAR CURB RAMPS
(PD-01)

SCALE: | SHEET OF SHEETS | STA. | TO STA.

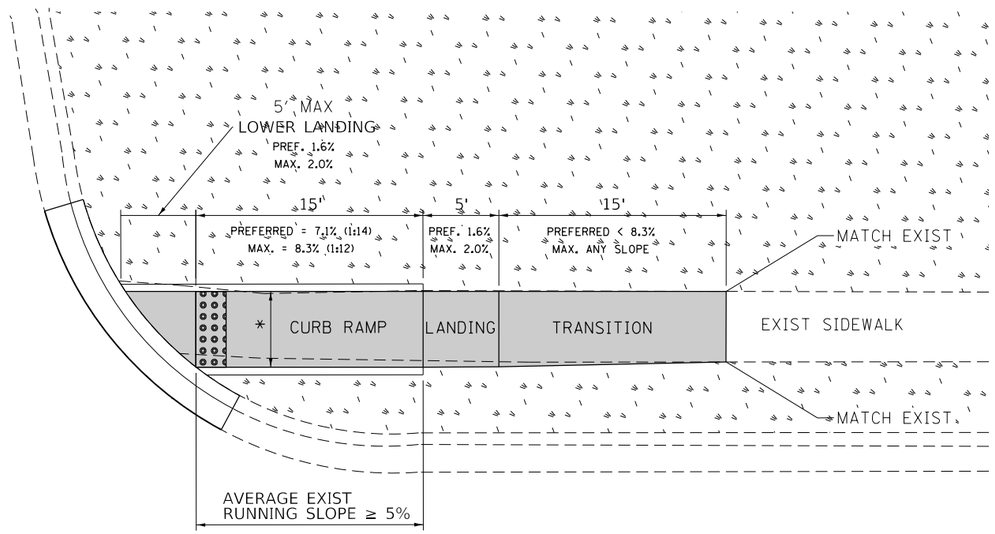
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PD-01	CONTRACT NO.		
	ILLINOIS FED. AID PROJECT			

ADA DETAIL FOR SINGLE PERPENDICULAR CURB RAMPS W/ EXIST. 5% OR GREATER RUN. SLOPE

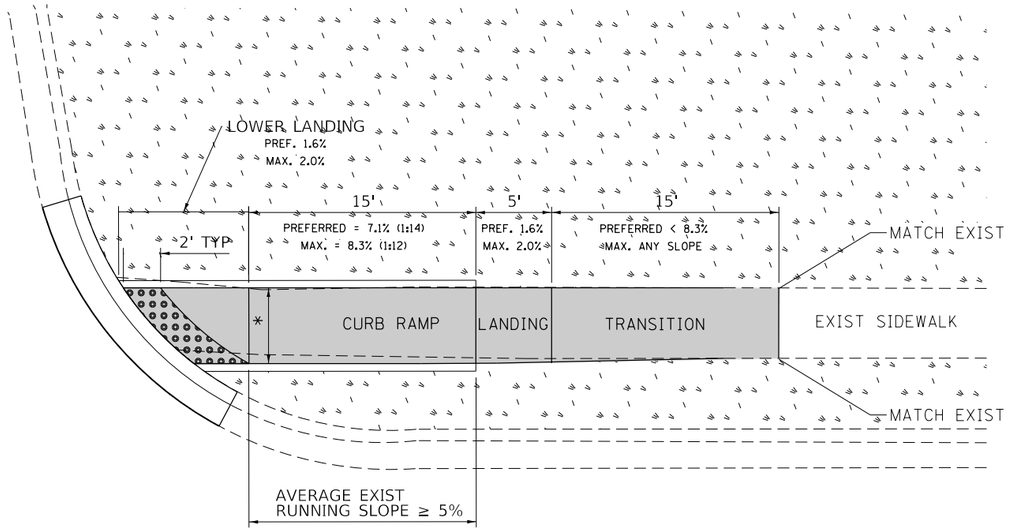
PD-02A



PD-02B



PD-02C



DESIGNER NOTES:

1) ALL CROSS SLOPES ARE PREFERRED 1.6% (1:64), MAXIMUM 2% (1:50).
2) SIDEWALK REALIGNMENT WILL REQUIRE DETAILED DESIGN.
3) AREAS SURROUNDED BY PCC/ASPHALT, BUILDINGS, OR ARE NEAR TO DRIVEWAYS, REALIGNED SIDEWALK, UTILITY AND SIGNAL POLES, OR WHEN PRIVATE SIDEWALK TIES IN, WILL REQUIRE DETAILED SURVEY AND DESIGN.
4) ALL BRICK CORNERS WILL REQUIRE SUPERVISOR APPROVAL BEFORE USING PROJECT DETAILS

LEGEND

- PROPOSED SIDE CURB
- EXIST. GRASS
- PROPOSED SIDEWALK
- DETECTABLE WARNINGS

CONSTRUCTION NOTES:

1) ALL CROSS SLOPES ARE PREFERRED 1.6% (1:64), MAXIMUM 2% (1:50) EXCEPT WHEN TRANSITIONING TO EXISTING SIDEWALK

* MATCH EXISTING SIDEWALK WIDTH

FILE NAME = S:\WP\PLANPREP\SQUAD_1\Des_RL\Typical ADA details\Typical-ADA-sht-plan.dgn	USER NAME = ledezmarm	DESIGNED - ___ __/__/____	REVISED -
		DRAWN - RL 11/12/2019	REVISED -
	PLOT SCALE = 10.0000 ' / in.	CHECKED -	REVISED -
Default	PLOT DATE = 11/12/2019	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

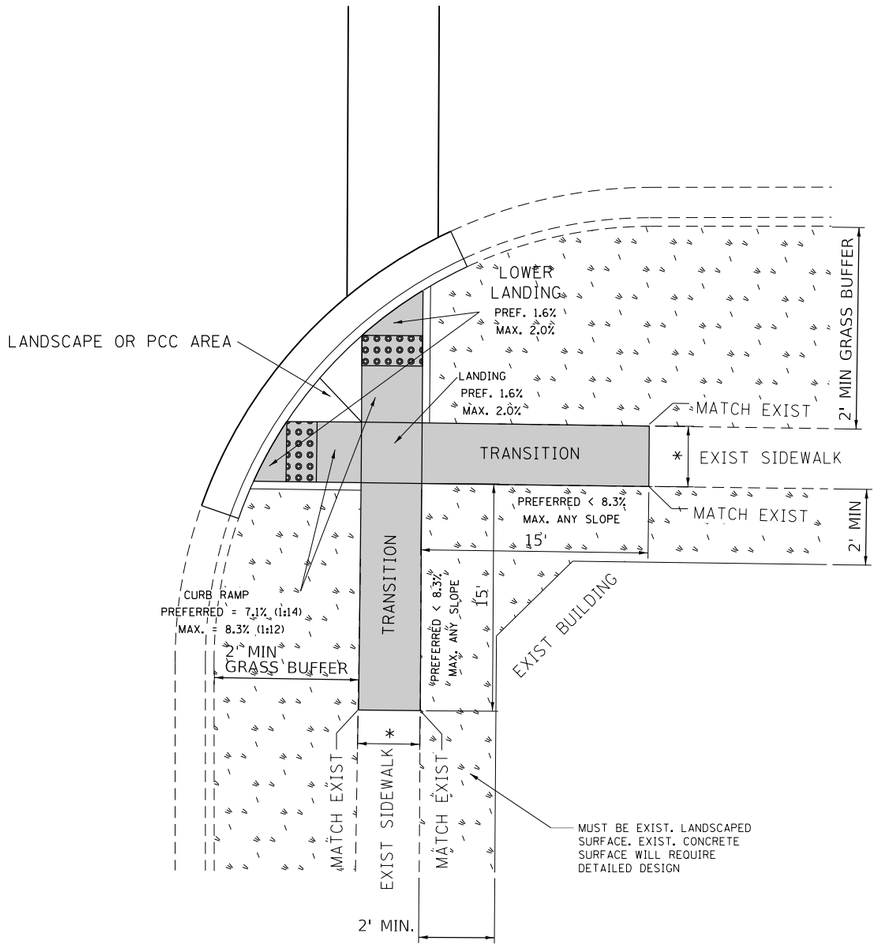
PROJECT DETAIL FOR SINGLE PERPENDICULAR CURB RAMPS
(PD-02)

SCALE: | SHEET OF SHEETS | STA. | TO STA.

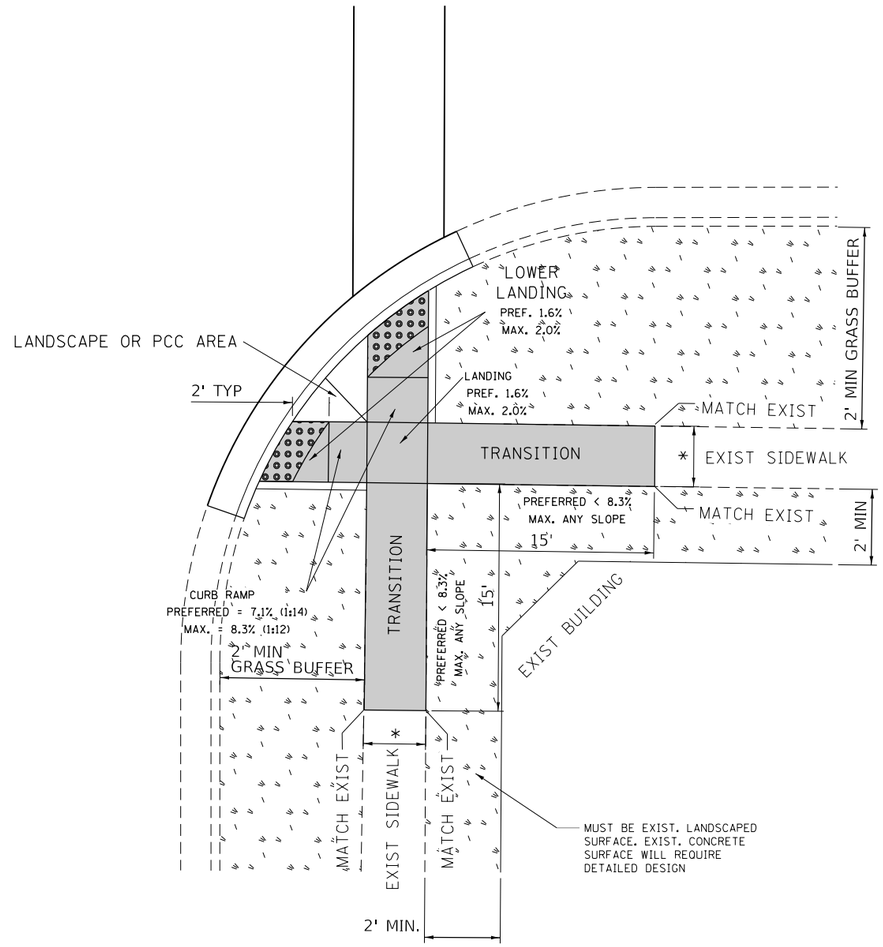
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PD-02	CONTRACT NO.		
	ILLINOIS FED. AID PROJECT			

ADA DETAIL FOR DOUBLE PERPENDICULAR CURB RAMPS

PD-03A



PD-03B



DESIGNER NOTES:

1) ALL CROSS SLOPES ARE PREFERRED 1.6% (1:64), MAXIMUM 2% (1:50).
2) SIDEWALK REALIGNMENT WILL REQUIRE DETAILED DESIGN.
3) AREAS SURROUNDED BY PCC/ASPHALT, BUILDINGS, OR ARE NEAR TO DRIVEWAYS, REALIGNED SIDEWALK, UTILITY AND SIGNAL POLES, OR WHEN PRIVATE SIDEWALK TIES IN, WILL REQUIRE DETAILED SURVEY AND DESIGN.
4) ALL BRICK CORNERS WILL REQUIRE SUPERVISOR APPROVAL BEFORE USING PROJECT DETAILS

LEGEND

PROPOSED SIDE CURB

EXIST. GRASS

PROPOSED SIDEWALK

DETECTABLE WARNINGS

CONSTRUCTION NOTES:

1) ALL CROSS SLOPES ARE PREFERRED 1.6% (1:64), MAXIMUM 2% (1:50) EXCEPT WHEN TRANSITIONING TO EXISTING SIDEWALK

* MATCH EXISTING SIDEWALK WIDTH

FILE NAME = S:\WP\PLANPREP\SQUAD_1\Des_RL\Typical ADA details\Typical-ADA-sht-plan.dgn	USER NAME = ledezmarm	DESIGNED - --- --/--/----	REVISED -
		DRAWN - RL 11/12/2019	REVISED -
	PLOT SCALE = 10.0000 ' / in.	CHECKED -	REVISED -
Default	PLOT DATE = 11/12/2019	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

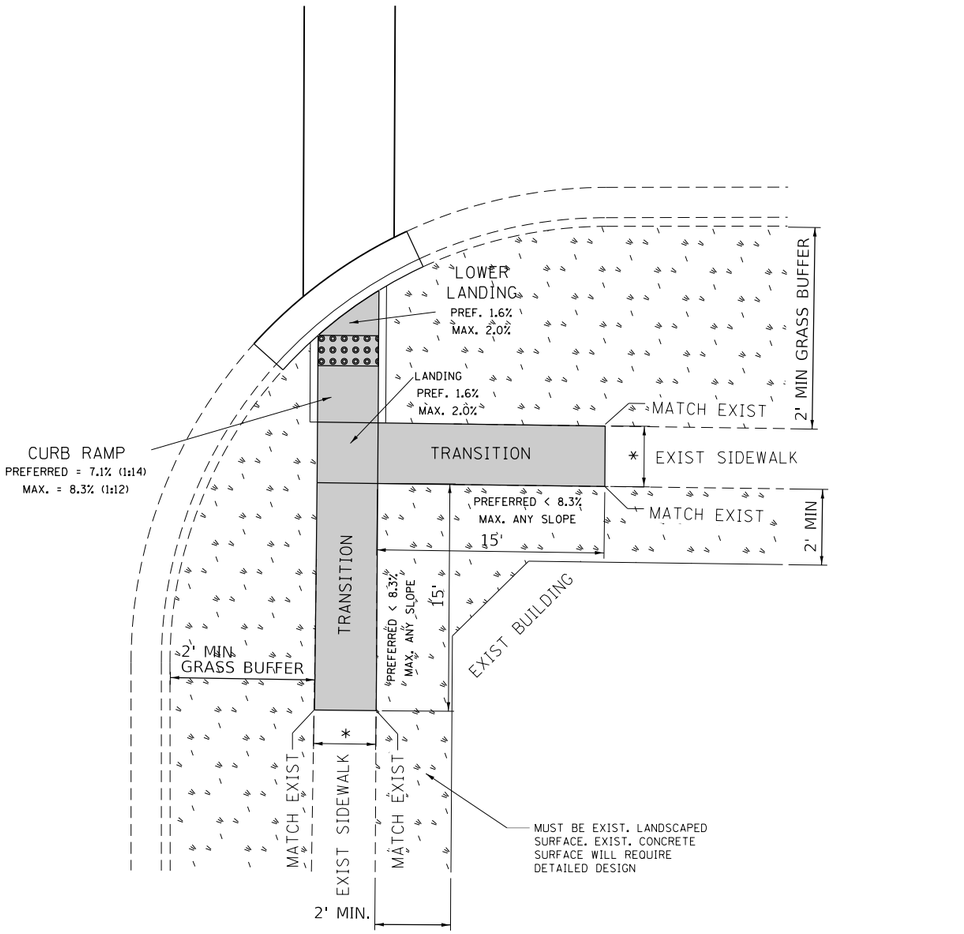
PROJECT DETAIL FOR DOUBLE PERPENDICULAR CURB RAMPS
(PD-03)

SCALE: | SHEET OF SHEETS | STA. | TO STA.

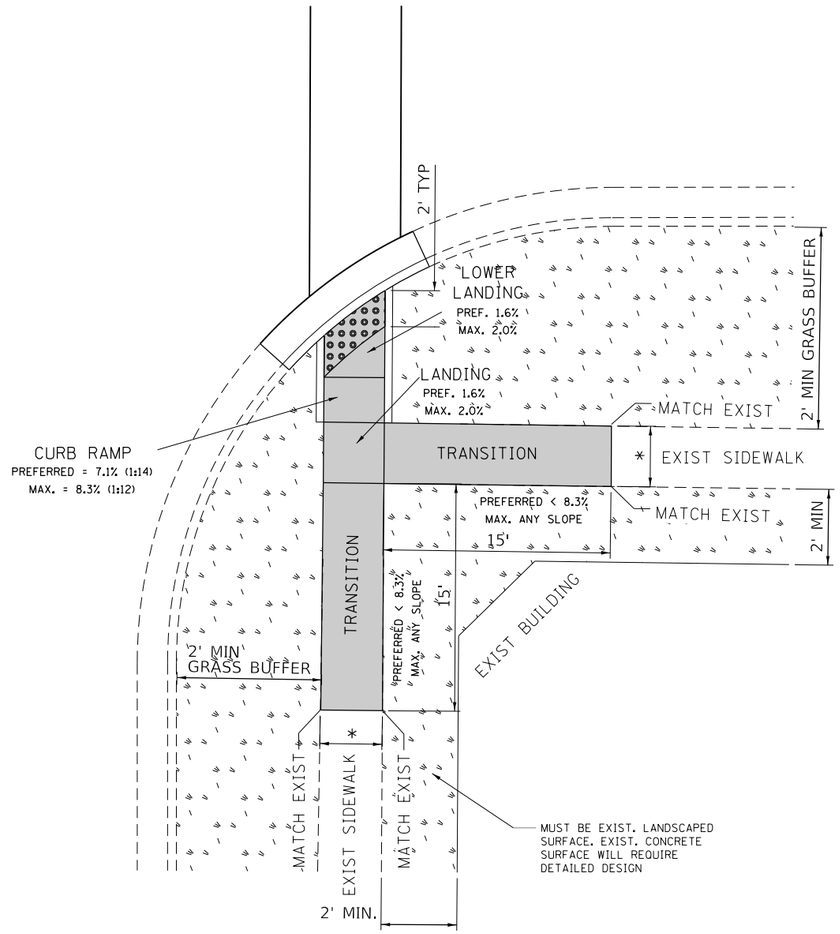
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PD-03		CONTRACT NO.	
	ILLINOIS FED. AID PROJECT			

ADA DETAIL FOR SINGLE PERPENDICULAR CURB RAMPS W/ TURNING SPACE

PD-04A



PD-04B



DESIGNER NOTES:

1) ALL CROSS SLOPES ARE PREFERRED 1.6% (1:64), MAXIMUM 2% (1:50).
2) SIDEWALK REALIGNMENT WILL REQUIRE DETAILED DESIGN.
3) AREAS SURROUNDED BY PCC/ASPHALT, BUILDINGS, OR ARE NEAR TO DRIVEWAYS, REALIGNED SIDEWALK, UTILITY AND SIGNAL POLES, OR WHEN PRIVATE SIDEWALK TIES IN, WILL REQUIRE DETAILED SURVEY AND DESIGN.
4) ALL BRICK CORNERS WILL REQUIRE SUPERVISOR APPROVAL BEFORE USING PROJECT DETAILS

LEGEND

PROPOSED SIDE CURB

EXIST. GRASS

PROPOSED SIDEWALK

DETECTABLE WARNINGS

CONSTRUCTION NOTES:

1) ALL CROSS SLOPES ARE PREFERRED 1.6% (1:64), MAXIMUM 2% (1:50) EXCEPT WHEN TRANSITIONING TO EXISTING SIDEWALK

* MATCH EXISTING SIDEWALK WIDTH

FILE NAME = S:\WP\PLANPREP\SQUAD_1\Des_RL\Typical ADA details\Typical-ADA-sht-plan.dgn	USER NAME = ledezmarm	DESIGNED - ___ __/__/____	REVISED -
		DRAWN - RL 11/12/2019	REVISED -
	PLOT SCALE = 10.0000 ' / in.	CHECKED -	REVISED -
Default	PLOT DATE = 11/12/2019	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

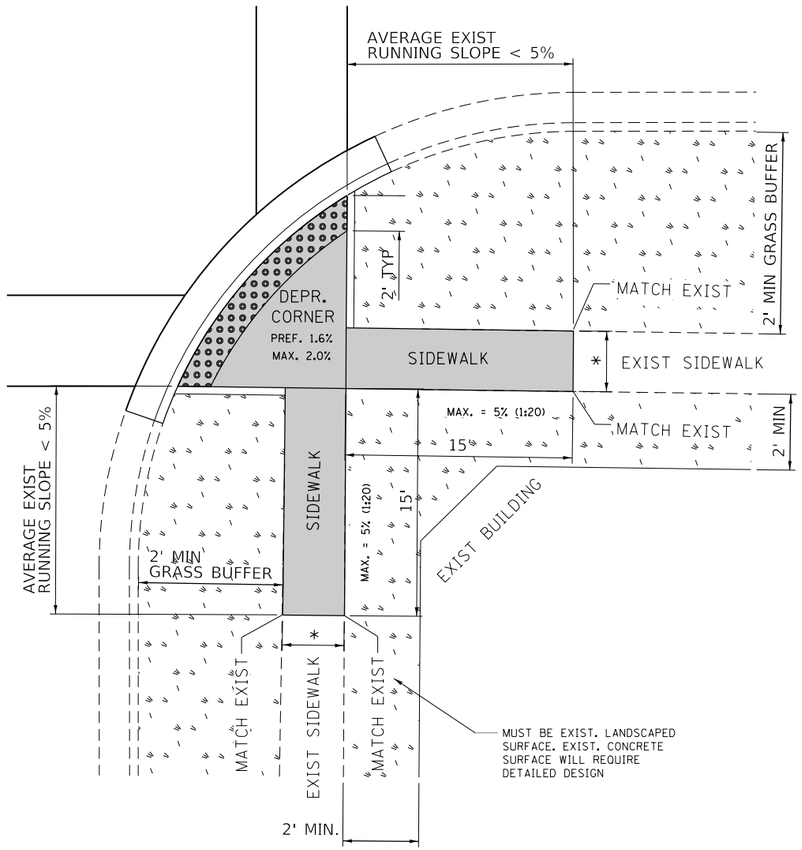
PROJECT DETAIL FOR SINGLE PERPENDICULAR CURB RAMPS W/TURNING SPACE (PD–04)

SCALE: | SHEET OF SHEETS | STA. TO STA.

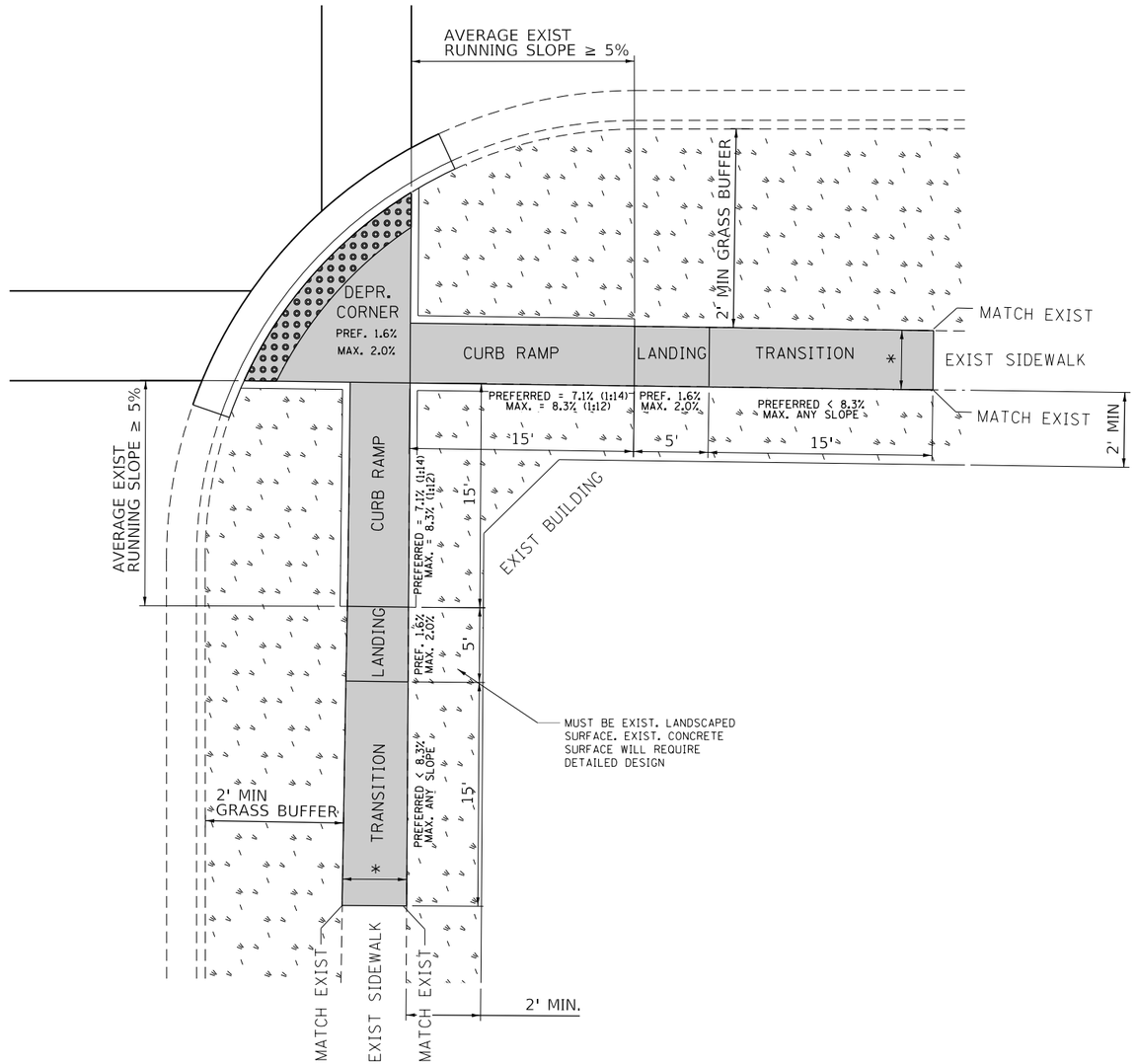
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PD-04	CONTRACT NO.		
	ILLINOIS FED. AID PROJECT			

ADA DETAIL FOR DEPRESSED CORNER CURB RAMPS

PD-05A



PD-05B



DESIGNER NOTES:

1) ALL CROSS SLOPES ARE PREFERRED 1.6% (1:64), MAXIMUM 2% (1:50).
2) SIDEWALK REALIGNMENT WILL REQUIRE DETAILED DESIGN.
3) AREAS SURROUNDED BY PCC/ASPHALT, BUILDINGS, OR ARE NEAR TO DRIVEWAYS, REALIGNED SIDEWALK, UTILITY AND SIGNAL POLES, OR WHEN PRIVATE SIDEWALK TIES IN, WILL REQUIRE DETAILED SURVEY AND DESIGN.
4) ALL BRICK CORNERS WILL REQUIRE SUPERVISOR APPROVAL BEFORE USING PROJECT DETAILS

LEGEND

PROPOSED SIDE CURB

EXIST. GRASS

PROPOSED SIDEWALK

DETECTABLE WARNINGS

CONSTRUCTION NOTES:

1) ALL CROSS SLOPES ARE PREFERRED 1.6% (1:64), MAXIMUM 2% (1:50) EXCEPT WHEN TRANSITIONING TO EXISTING SIDEWALK

* MATCH EXISTING SIDEWALK WIDTH

FILE NAME =	USER NAME = ledezmarm	DESIGNED -	REVISED -
S:\WP\PLANPREP\SQUAD_1\Des_RL\Typical ADA details\Typical-ADA-sht-plan.dgn		DRAWN - RL 11/12/2019	REVISED -
	PLOT SCALE = 10.0000 ' / in.	CHECKED -	REVISED -
Default	PLOT DATE = 11/12/2019	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

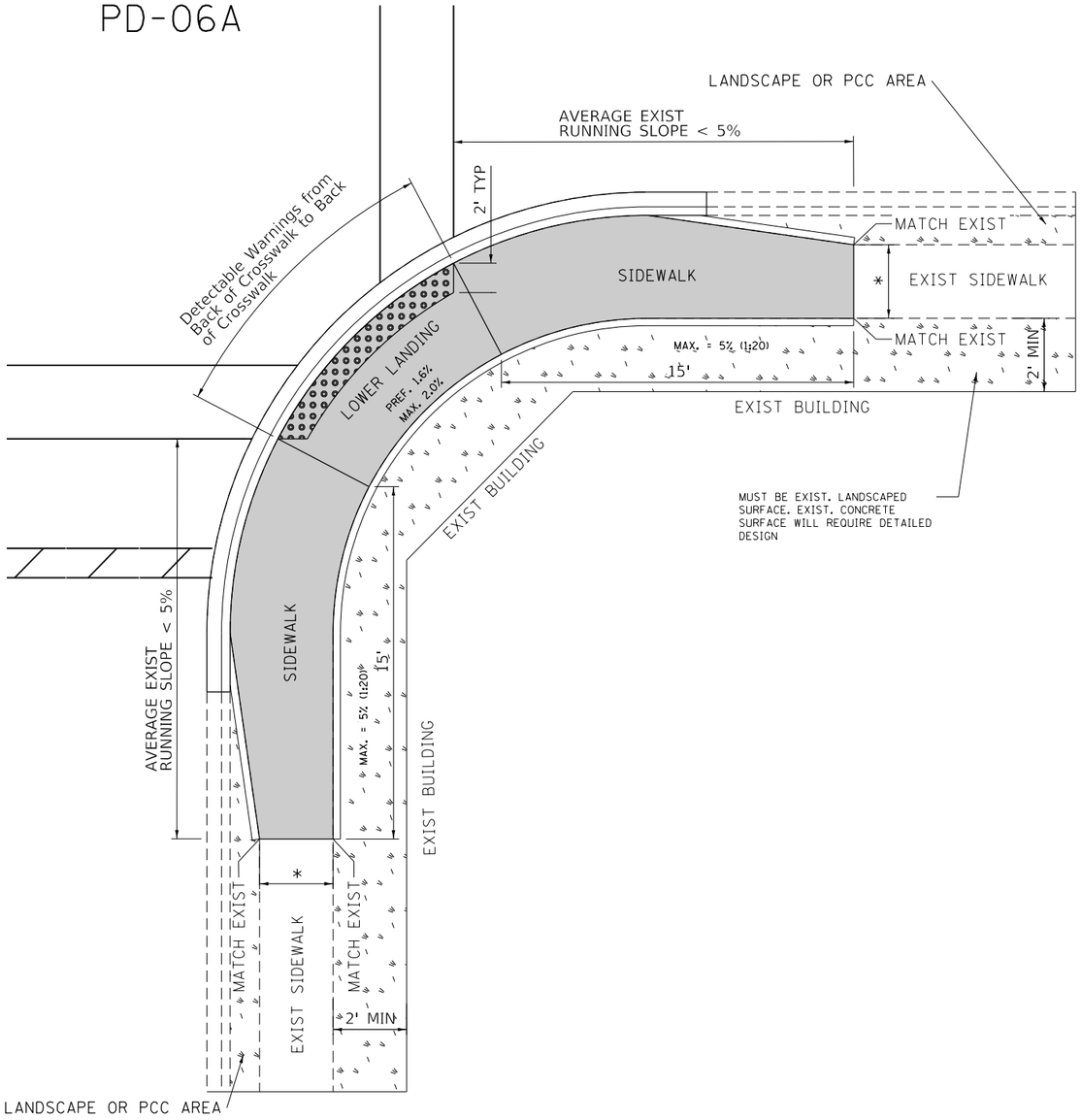
PROJECT DETAIL FOR DEPRESSED CORNER CURB RAMPS
(PD-05)

SCALE: | SHEET OF SHEETS | STA. | TO STA.

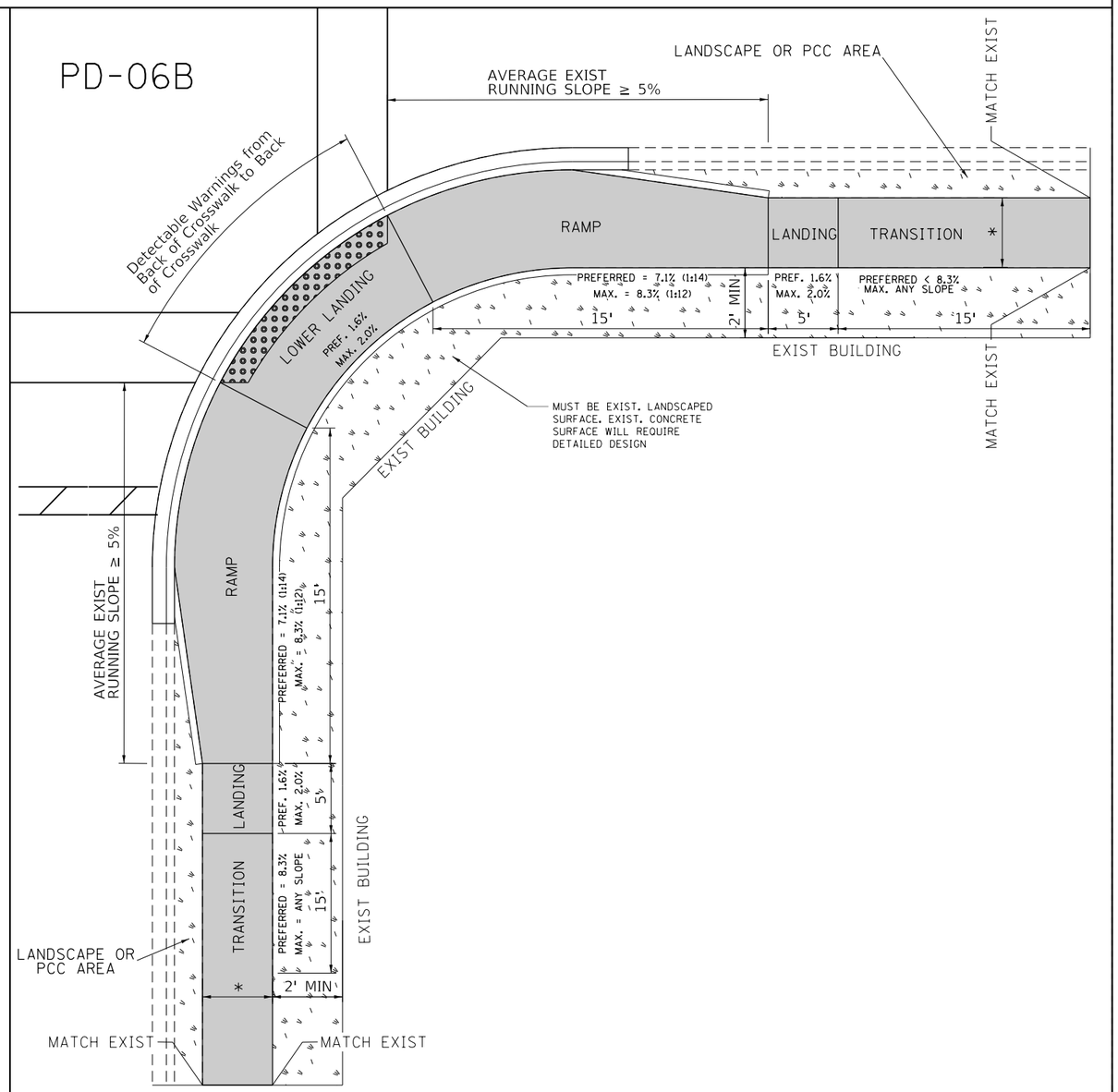
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PD-05	CONTRACT NO.		
	ILLINOIS FED. AID PROJECT			

ADA DETAIL FOR PARALLEL CURB RAMPS ADJACENT TO LANDSCAPING

PD-06A



PD-06B



DESIGNER NOTES:

1) ALL CROSS SLOPES ARE PREFERRED 1.6% (1:64), MAXIMUM 2% (1:50).
2) SIDEWALK REALIGNMENT WILL REQUIRE DETAILED DESIGN.
3) AREAS SURROUNDED BY PCC/ASPHALT, BUILDINGS, OR ARE NEAR TO DRIVEWAYS, REALIGNED SIDEWALK, UTILITY AND SIGNAL POLES, OR WHEN PRIVATE SIDEWALK TIES IN, WILL REQUIRE DETAILED SURVEY AND DESIGN.
4) ALL BRICK CORNERS WILL REQUIRE SUPERVISOR APPROVAL BEFORE USING PROJECT DETAILS

LEGEND

- PROPOSED SIDE CURB
- EXIST. GRASS
- PROPOSED SIDEWALK
- DETECTABLE WARNINGS

CONSTRUCTION NOTES:

1) ALL CROSS SLOPES ARE PREFERRED 1.6% (1:64), MAXIMUM 2% (1:50) EXCEPT WHEN TRANSITIONING TO EXISTING SIDEWALK

* MATCH EXISTING SIDEWALK WIDTH

FILE NAME = S:\WP\PLANPREP\SQUAD_1\Des_RL\Typical ADA details\Typical-ADA-sht-plan.dgn	USER NAME = ledezmarm	DESIGNED -	--- --/--/----	REVISED -
		DRAWN -	RL 11/12/2019	REVISED -
	PLOT SCALE = 10.0000 ' / in.	CHECKED -		REVISED -
Default	PLOT DATE = 11/12/2019	DATE -		REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PROJECT DETAIL FOR PARALLEL CURB RAMPS
(PD–06)

SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PD-06		CONTRACT NO.	
	ILLINOIS	FED. AID PROJECT		

ADA Curb Ramp Design Automation Tool

User Manual

11/6/2019

Illinois Department of Transportation
Bureau of Design
District 1
Region 1

Table of Contents

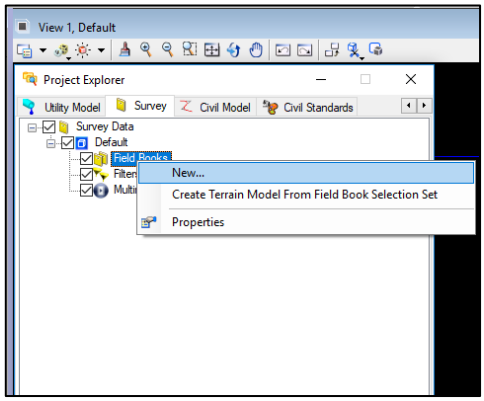
1. Defining Geometric Design in CADD

Define geometric design in MicroStation utilizing BDE and PROWAG design guidelines and standards.

2. Creating Design Points

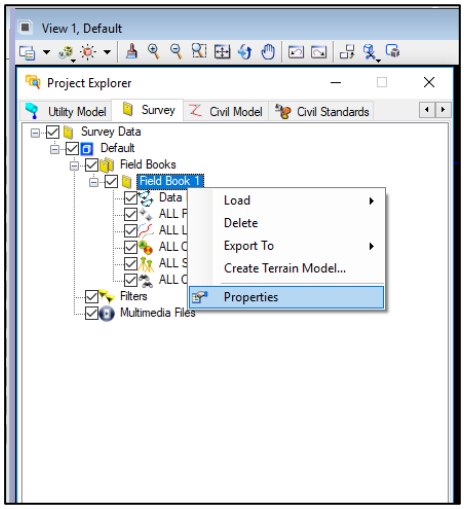
Design points are created for the proposed design at each node using the following steps:

2.1 Creating a new survey field book in Project Explorer

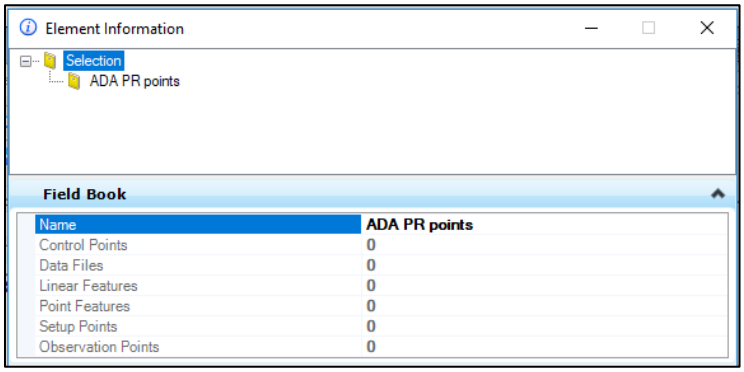


File −> Project Explorer −> Survey Tab −> right click on Field Books −> New.

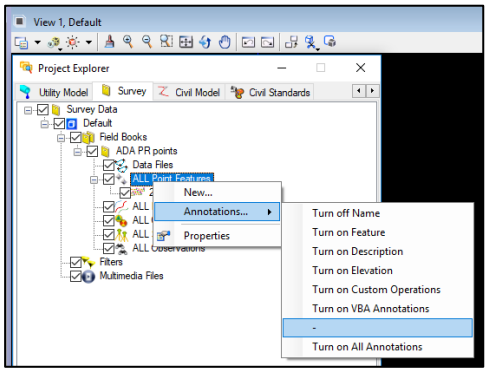
2.2 Renaming field book



Right click on new Field book −> Properties −> enter new name in the name property field.

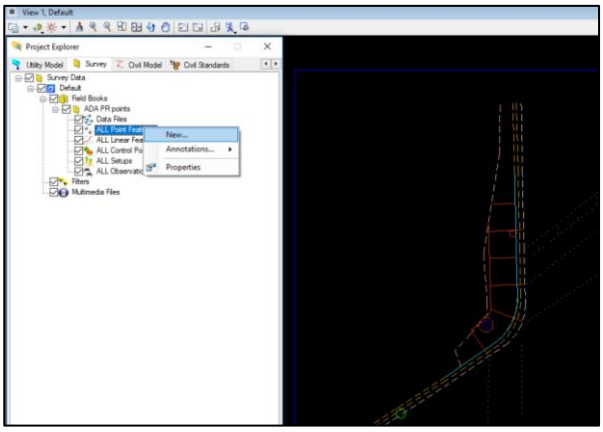


2.3 Modifying point display (Optional)



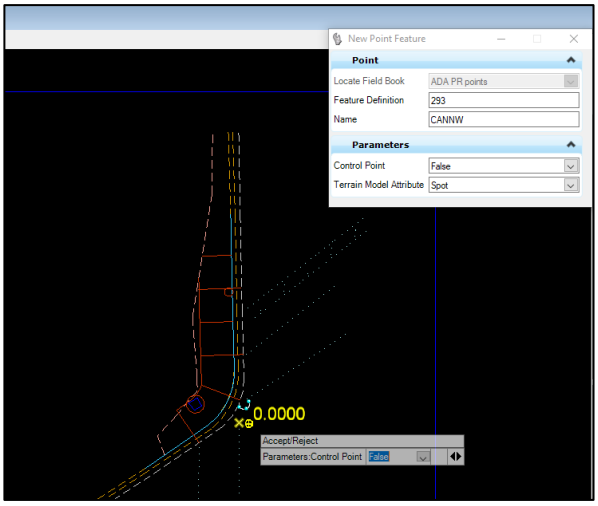
Turn on levels TOPO_POINT SPC CELL and TOPO_POINT NUMBERS.
Modify point annotation to only display point name by right clicking on All Point Features −> Annotation −> selecting on/off properties to be displayed.

2.4 Placing design points



Open the New Point Feature Toolbox by:
Right click on All Point Features −> New.

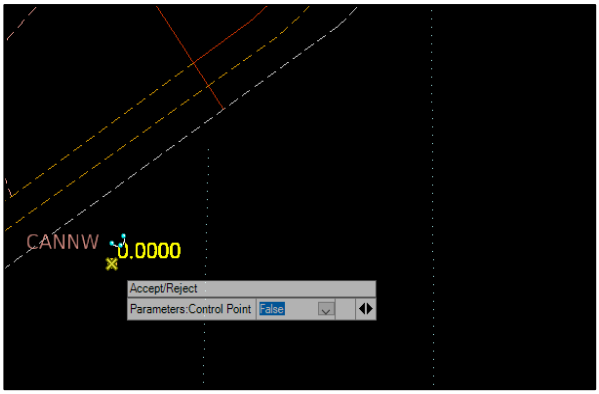
2.4.1 Inputting design point properties



Select the newly created field book from drop down menu −> Set the feature definition to 293 −> Create a 5-character name unique to this corner −> Set Control point to False −> Set Terrain Model Attribute to Spot. Continue to next step without exiting any tools, i.e., don't right-click.

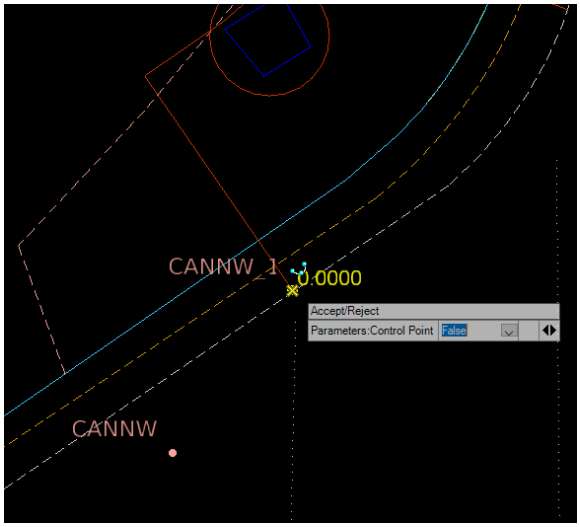
NOTE: It is imperative for the name to be 5-characters in length. No more, no less.

2.4.2 Placing proposed dummy design point



Click through the prompts until a point and elevation appears highlighted in yellow −> click somewhere outside of the sidewalk area to create the dummy point.
Continue to next step without exiting any tools.

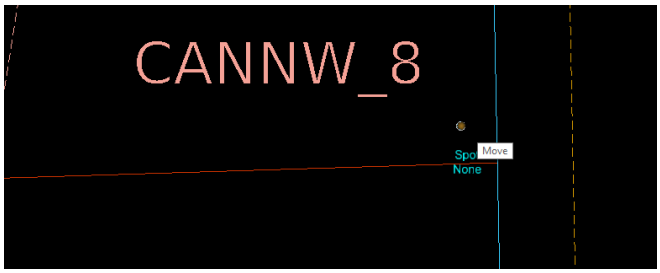
2.4.3 Placing proposed design points



Continue placing rest of points at nodes of proposed geometric design. Each point, by default, will be assigned a corresponding number following the name and an _.

To simplify later steps, abide by some point-placement convention where, for example, the adjacent points are placed in the direction where the proposed elevation will descend.

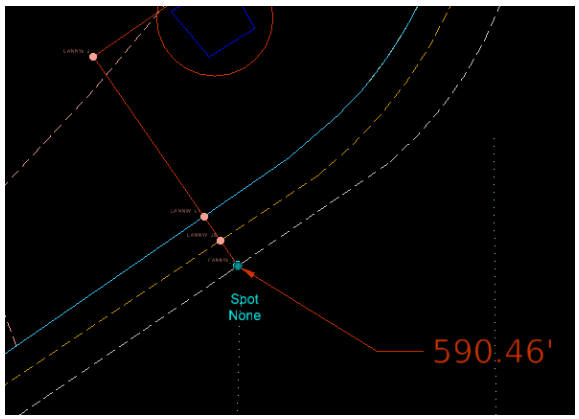
2.4.4 Modification of proposed design points (as needed)

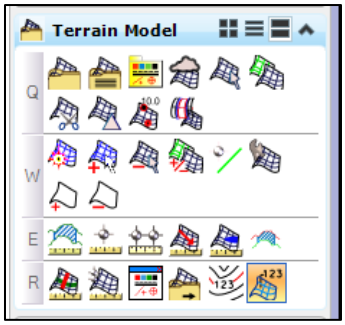


Move points by clicking on the point and selecting the center handle. Rename points by going into element information of the point and entering a new name.

2.5 Inputting existing elevations of proposed design points

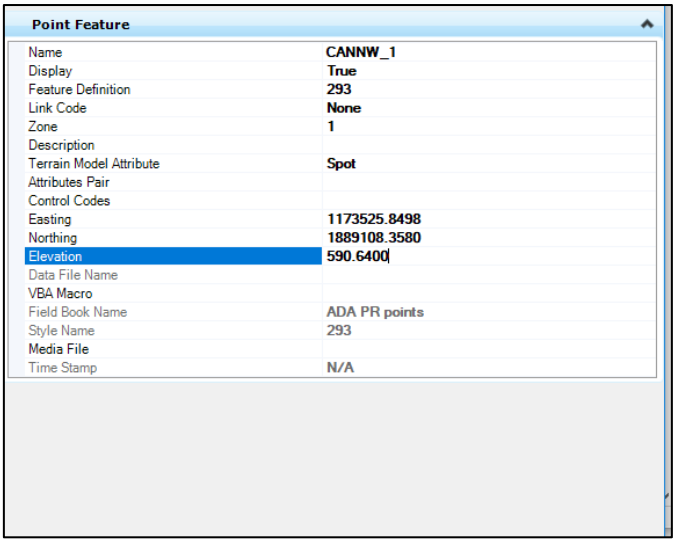
2.5.1 Creating elevation labels (existing points only)





Use the Label Terrain Spots tool, under the Civil Tools task tab –> Terrain Model. Select the existing terrain model when prompted –> Click on the existing design point –> Click to place label.

2.5.2 Inputting existing elevation into design points

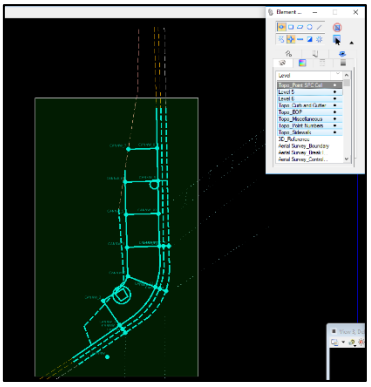


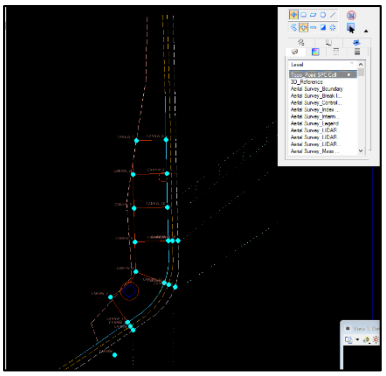
Open element information window for the point –> Enter the elevation, placed using the label, into the elevation field.

3. Exporting Design Points into ADA Automation Tool

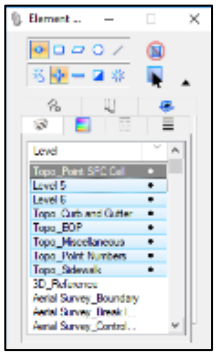
Data for points created is extracted from CADD and imported into ADA Automation Tool using the following steps:

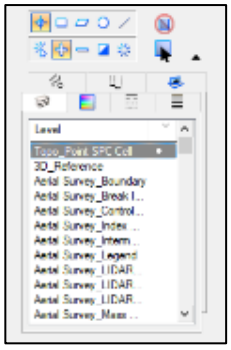
3.1 Selecting design points



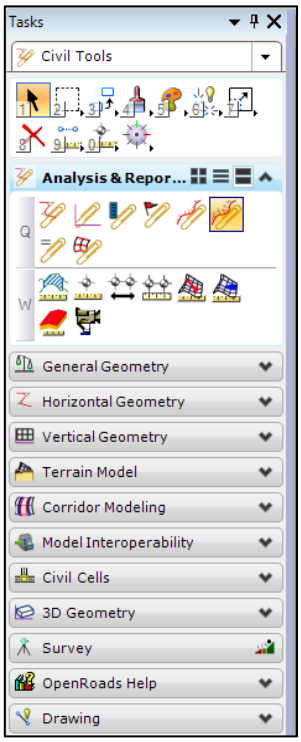


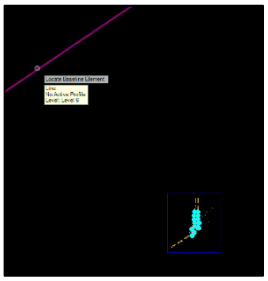
Select all elements in the corner to-be-designed –> turn off selection for all elements not in the grey TOPO_POINT SPC CELL level. NOTE: End-result of selection should only include points created.

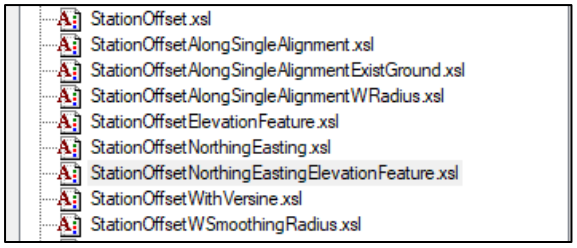


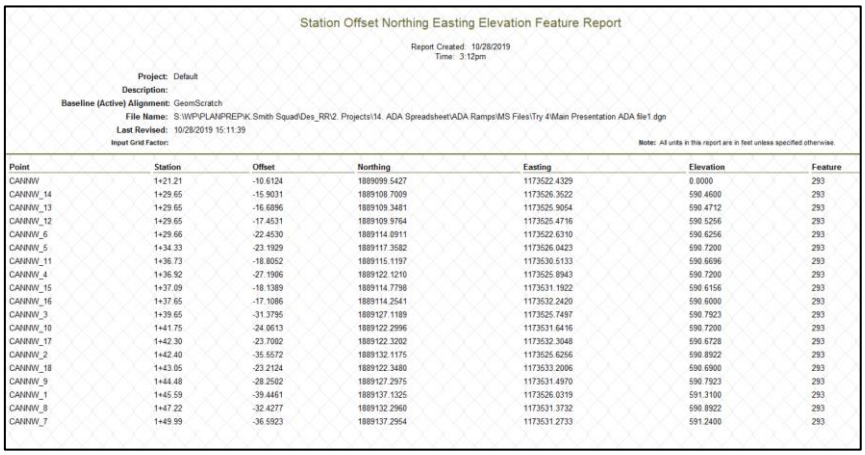


3.2 Generating a point report









Station Offset Northing Easting Elevation Feature Report

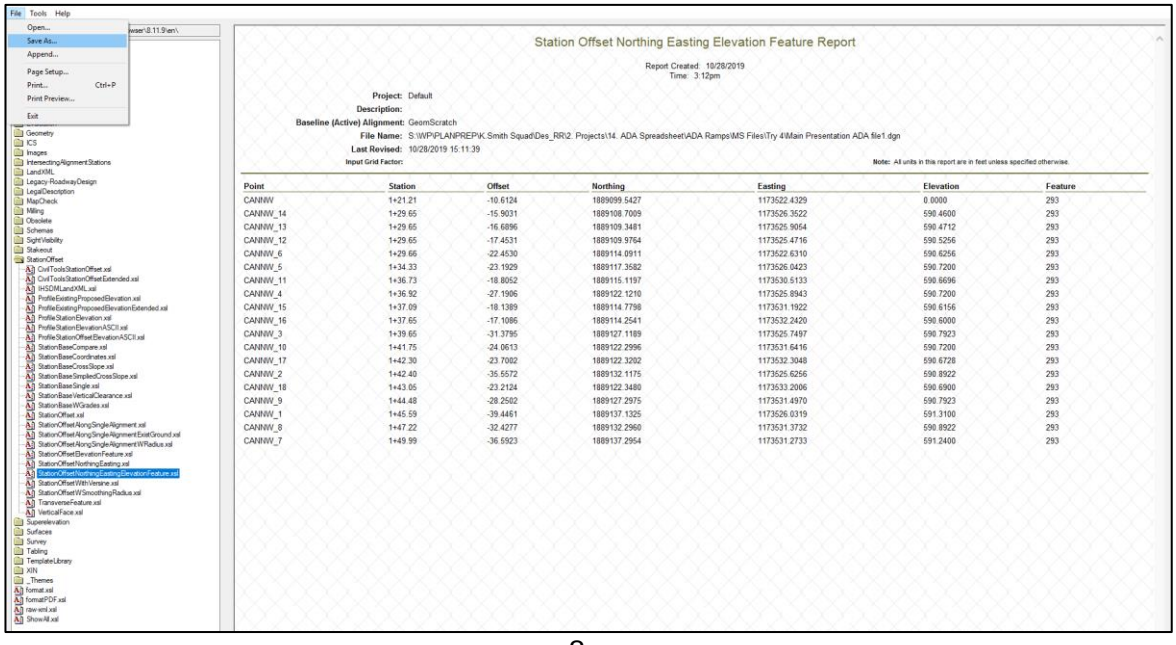
Report Created: 10/28/2019
Time: 3:12pm

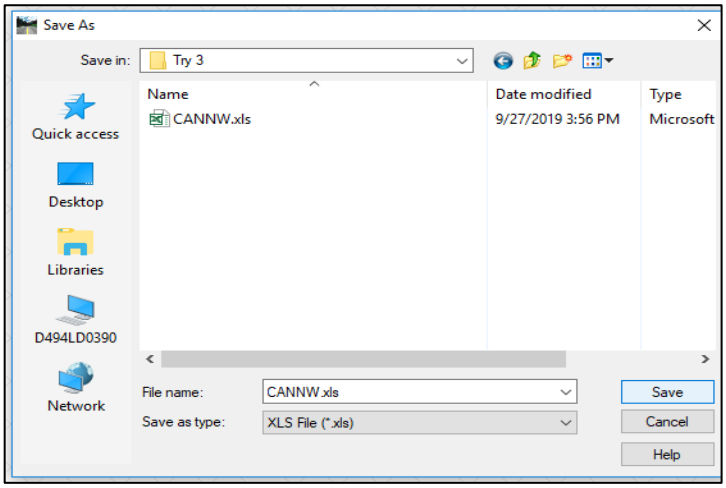
Project: Default
Description:
Baseline (Active) Alignment: GeomScratch
File Name: S:\WP\PLANPREP\K.Smith Squad\Des_RR\2. Projects\14. ADA Spreadsheet\ADA Ramps\MS Files\Try 4\Main Presentation ADA file1.dgn
Last Revised: 10/28/2019 15:11:39
Input Grid Factor:
Note: All units in this report are in feet unless specified otherwise.

Point	Station	Offset	Northing	Easting	Elevation	Feature
CANNW	1+21.21	-10.6124	1889099.5427	1173522.4329	0.0000	293
CANNW_14	1+29.65	-15.9031	1889108.7009	1173526.3522	590.4600	293
CANNW_13	1+29.65	-16.6896	1889109.3481	1173525.9054	590.4712	293
CANNW_12	1+29.65	-17.4531	1889109.9764	1173525.4716	590.5256	293
CANNW_6	1+29.66	-22.4530	1889114.0911	1173522.6310	590.6256	293
CANNW_5	1+34.33	-23.1929	1889117.3582	1173526.0423	590.7200	293
CANNW_11	1+36.73	-18.8052	1889115.1197	1173530.5133	590.6696	293
CANNW_4	1+36.92	-27.1906	1889122.1210	1173525.8943	590.7200	293
CANNW_15	1+37.09	-18.1389	1889114.7798	1173631.1922	590.6156	293
CANNW_16	1+37.65	-17.1086	1889114.2541	1173632.2420	590.6000	293
CANNW_3	1+39.65	-31.3795	1889127.1189	1173525.7497	590.7923	293
CANNW_10	1+41.75	-24.0613	1889122.2996	1173631.6416	590.7200	293
CANNW_17	1+42.30	-23.7002	1889122.3202	1173632.3048	590.6728	293
CANNW_2	1+42.40	-35.5572	1889132.1175	1173525.6256	590.8922	293
CANNW_18	1+43.05	-23.2124	1889122.3480	1173633.2006	590.6900	293
CANNW_9	1+44.48	-28.2502	1889127.2975	1173631.4970	590.7923	293
CANNW_1	1+45.59	-39.4461	1889137.1325	1173526.0319	591.3100	293
CANNW_8	1+47.22	-32.4277	1889132.2960	1173631.3732	590.8922	293
CANNW_7	1+49.99	-36.5923	1889137.2954	1173631.2733	591.2400	293

With points selected use the Point Feature Station Offset Elevation Report tool, found under Civil Tools task tab −> Analysis & Reporting. Follow prompts by selecting any base line that runs through the project −> left-click to create report. A report will open. If a base line, like an alignment, is not available, create one using Line Between Points tool under Civil Tools −> Horizontal Geometry.

3.3 Exporting report in .xls format

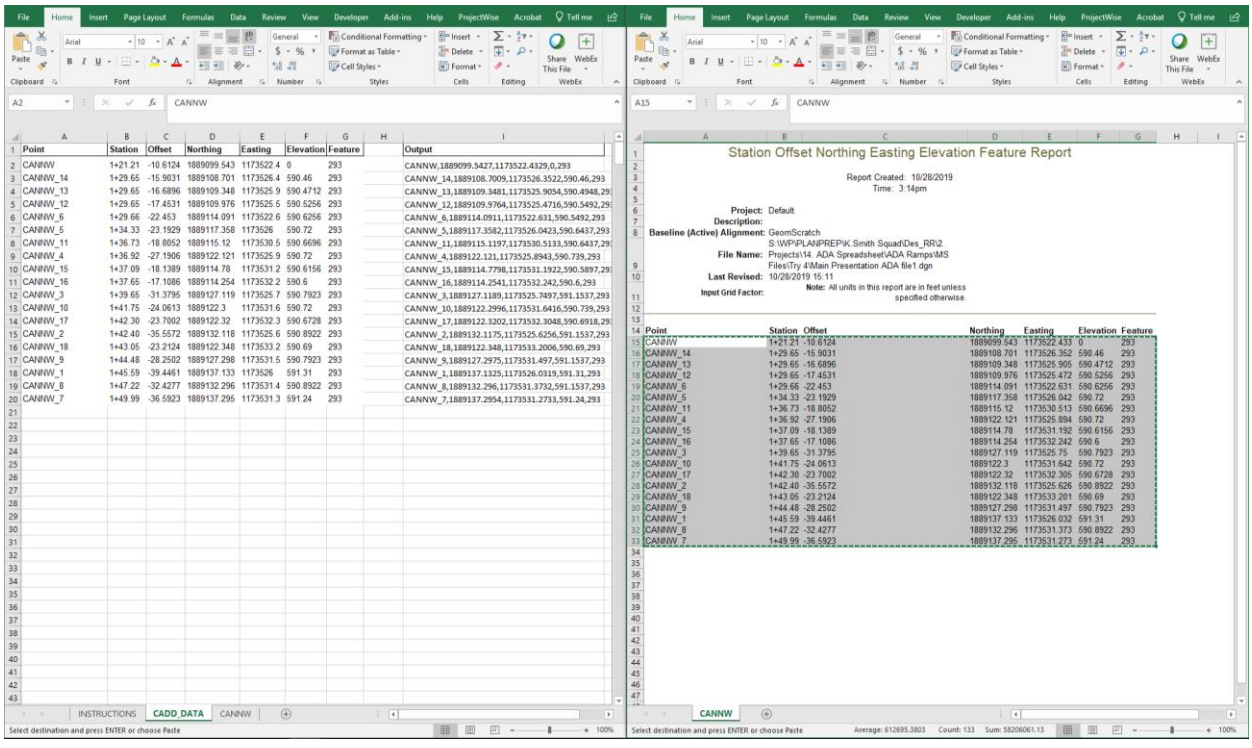




Set report format to: StationOffsetNorthingEastingElevationFeature from the left sidebar. Format of the report needs to match that shown in sub-steps 3.2 and 3.3. It can be modified through Tools −> Format Options. Then, click File −> Save as. Save file in XLS (excel) format somewhere in your project folder.

NOTE: it is recommended to name the exported excel file after the corner name, i.e., 5-character name.

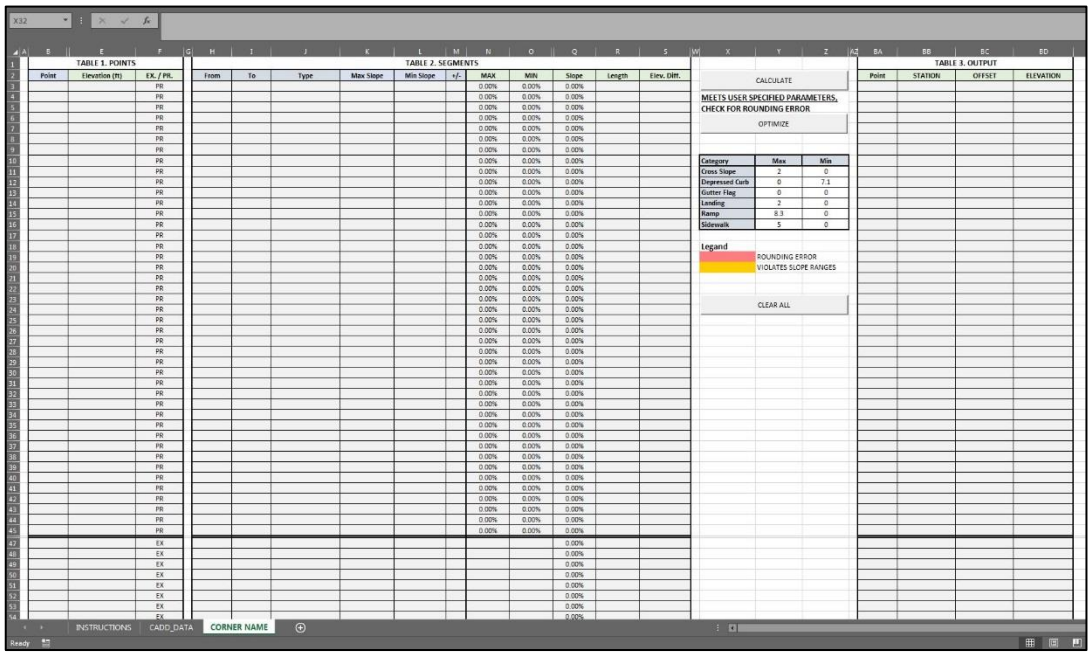
3.4 Copying report data into ADA Automation Tool spreadsheet



Copy the 7-column block from the report Excel Sheet into the first seven columns of the CADD_DATA tab in the ADA_Automation_Tool spreadsheet. Note that all points in the CADD_DATA tab need to be unique. To overwrite a point that is already in the CADD_DATA sheet with a new location, either copy the point row from the MicroStation exported excel into the CADD_DATA tab over the point to be replaced, or simply overwrite all points in the same manner. New points can be added in the same way.

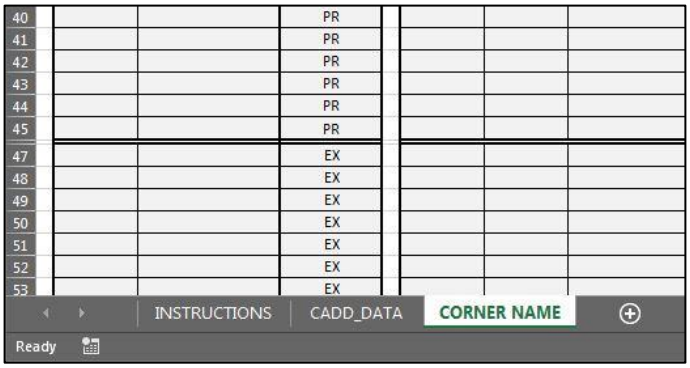
4. Generating Proposed Design Using ADA Automation Tool

Data for proposed design is generated utilizing an algorithm applied in the ADA Automation Tool in the form of a spreadsheet using the following steps:



ADA Automation Tool is a spreadsheet consisting of 3 main tabs: 1. Instruction, 2. CADD_Data, and 3. Corner Name. 3rd tab can be copied over for each ramp/corner to be designed.

4.1 Renaming template sheet



After copying data extracted from CADD to the CADD_DATA tab, first step is to rename the 3rd tab after the corner to be designed using the same 5-character name assigned during Step 2 Creating Design Points.

4.2 Listing design points in *Table 1*

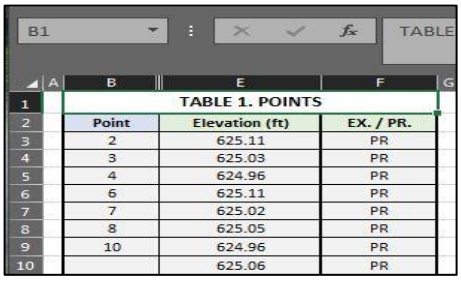


TABLE 1. POINTS		
Point	Elevation (ft)	EX. / PR.
2	625.11	PR
3	625.03	PR
4	624.96	PR
6	625.11	PR
7	625.02	PR
8	625.05	PR
10	624.96	PR
	625.06	PR

In Table 1 under column B, list all points of the proposed design using their numbers (or letters if changed in CADD to letters). Proposed points are to be listed in rows 3 to 45, and existing points are to be listed in rows 47 to 71.

4.3 Listing design segments in *Table 2*

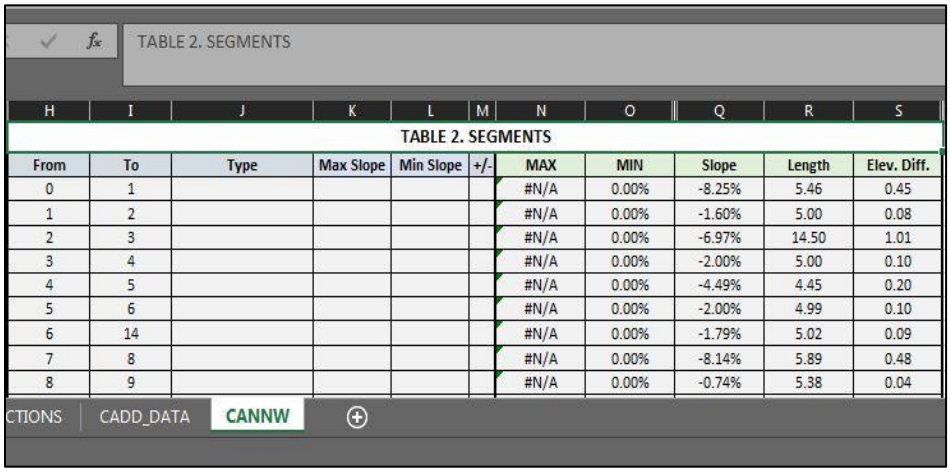


TABLE 2. SEGMENTS

H	I	J	K	L	M	N	O	Q	R	S
TABLE 2. SEGMENTS										
From	To	Type	Max Slope	Min Slope	+/-	MAX	MIN	Slope	Length	Elev. Diff.
0	1					#N/A	0.00%	-8.25%	5.46	0.45
1	2					#N/A	0.00%	-1.60%	5.00	0.08
2	3					#N/A	0.00%	-6.97%	14.50	1.01
3	4					#N/A	0.00%	-2.00%	5.00	0.10
4	5					#N/A	0.00%	-4.49%	4.45	0.20
5	6					#N/A	0.00%	-2.00%	4.99	0.10
6	14					#N/A	0.00%	-1.79%	5.02	0.09
7	8					#N/A	0.00%	-8.14%	5.89	0.48
8	9					#N/A	0.00%	-0.74%	5.38	0.04

CTIONS | CADD_DATA | CANNW

In Table 2 under columns H and I, list all segments of the proposed design. Proposed segments are to be listed in rows 3 to 45. It is optional to listed existing segments in rows 47 to 71. Length, slope and elevation difference will automatically populate.

NOTE: in Table 1 and 2 under columns A and E, duplicate entries are pointed out through a red highlight. Points and segments must be unique

4.4 Defining types of segment in *Table 2*

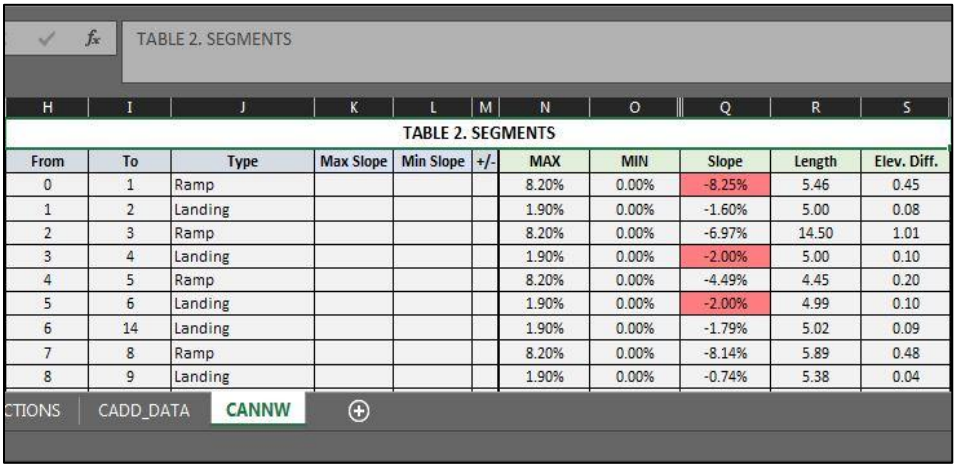
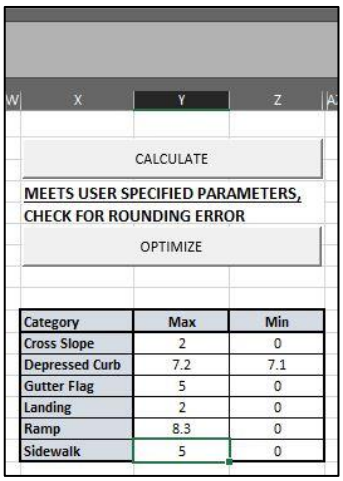


TABLE 2. SEGMENTS

H	I	J	K	L	M	N	O	Q	R	S
TABLE 2. SEGMENTS										
From	To	Type	Max Slope	Min Slope	+/-	MAX	MIN	Slope	Length	Elev. Diff.
0	1	Ramp				8.20%	0.00%	-8.25%	5.46	0.45
1	2	Landing				1.90%	0.00%	-1.60%	5.00	0.08
2	3	Ramp				8.20%	0.00%	-6.97%	14.50	1.01
3	4	Landing				1.90%	0.00%	-2.00%	5.00	0.10
4	5	Ramp				8.20%	0.00%	-4.49%	4.45	0.20
5	6	Landing				1.90%	0.00%	-2.00%	4.99	0.10
6	14	Landing				1.90%	0.00%	-1.79%	5.02	0.09
7	8	Ramp				8.20%	0.00%	-8.14%	5.89	0.48
8	9	Landing				1.90%	0.00%	-0.74%	5.38	0.04

CTIONS | CADD_DATA | CANNW

The maximum and minimum slope under columns N and O are used by the algorithm as constraints to generate the proposed design. These slopes are determined by the type listed under column J, any slope overrides under column K and L, and slope direction if defined under column M.



W | X | Y | Z | A

CALCULATE

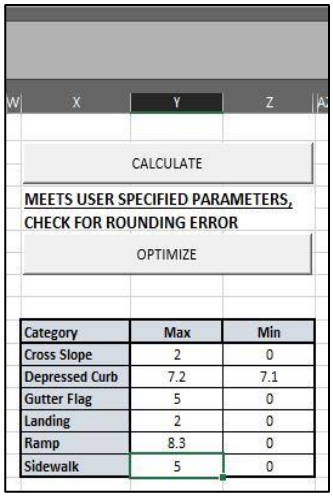
MEETS USER SPECIFIED PARAMETERS, CHECK FOR ROUNDING ERROR

OPTIMIZE

Category	Max	Min
Cross Slope	2	0
Depressed Curb	7.2	7.1
Gutter Flag	5	0
Landing	2	0
Ramp	8.3	0
Sidewalk	5	0

Under column J, define the type of each segment. Types will determine the allowable slope range for each segment as defined in the Category table under columns X, Y, and Z.

4.5 Overwriting maximum and minimum slope in *Table 2* (as needed)



CALCULATE

MEETS USER SPECIFIED PARAMETERS, CHECK FOR ROUNDING ERROR

OPTIMIZE

Category	Max	Min
Cross Slope	2	0
Depressed Curb	7.2	7.1
Gutter Flag	5	0
Landing	2	0
Ramp	8.3	0
Sidewalk	5	0

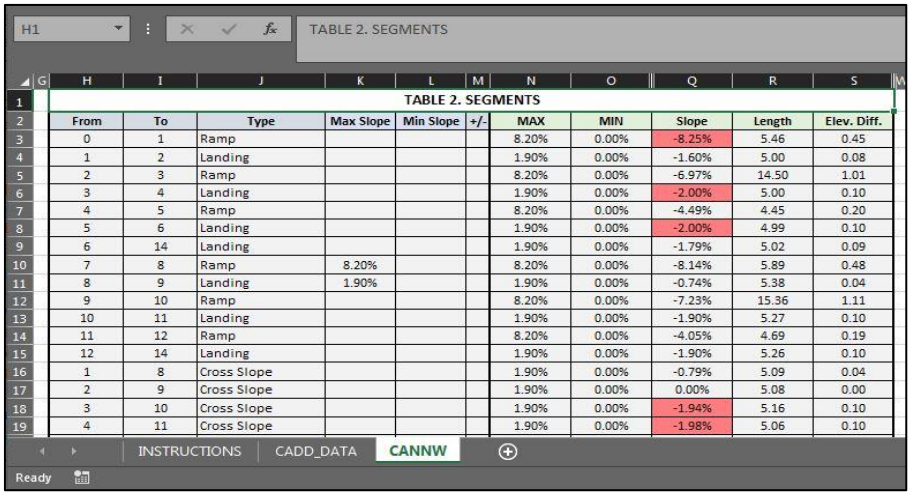


TABLE 2. SEGMENTS

From	To	Type	Max Slope	Min Slope	+/-	MAX	MIN	Slope	Length	Elev. Diff.
0	1	Ramp				8.20%	0.00%	-8.25%	5.46	0.45
1	2	Landing				1.90%	0.00%	-1.60%	5.00	0.08
2	3	Ramp				8.20%	0.00%	-6.97%	14.50	1.01
3	4	Landing				1.90%	0.00%	-2.00%	5.00	0.10
4	5	Ramp				8.20%	0.00%	-4.49%	4.45	0.20
5	6	Landing				1.90%	0.00%	-2.00%	4.99	0.10
6	14	Landing				1.90%	0.00%	-1.79%	5.02	0.09
7	8	Ramp	8.20%			8.20%	0.00%	-8.14%	5.89	0.48
8	9	Landing	1.90%			1.90%	0.00%	-0.74%	5.38	0.04
9	10	Ramp				8.20%	0.00%	-7.23%	15.36	1.11
10	11	Landing				1.90%	0.00%	-1.90%	5.27	0.10
11	12	Ramp				8.20%	0.00%	-4.05%	4.69	0.19
12	14	Landing				1.90%	0.00%	-1.90%	5.26	0.10
1	8	Cross Slope				1.90%	0.00%	-0.79%	5.09	0.04
2	9	Cross Slope				1.90%	0.00%	0.00%	5.08	0.00
3	10	Cross Slope				1.90%	0.00%	-1.94%	5.16	0.10
4	11	Cross Slope				1.90%	0.00%	-1.98%	5.06	0.10

INSTRUCTIONS | CADD_DATA | CANNW

Ready

In TABLE 2. under columns K and L, overwrite allowable slope range for individual segments as needed.

4.6 Defining slope direction in *Table 2* (as needed)

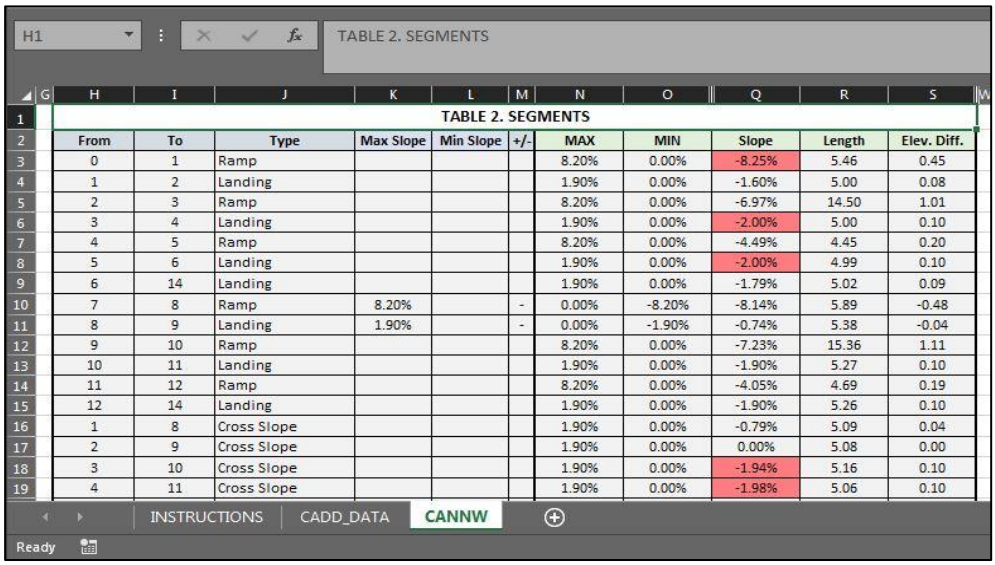


TABLE 2. SEGMENTS

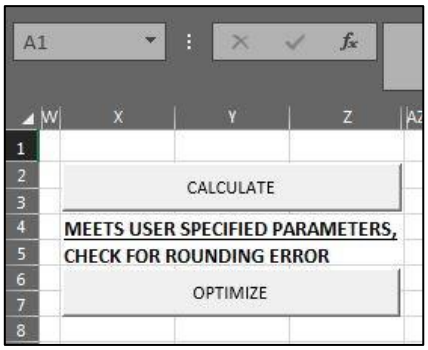
From	To	Type	Max Slope	Min Slope	+/-	MAX	MIN	Slope	Length	Elev. Diff.
0	1	Ramp				8.20%	0.00%	-8.25%	5.46	0.45
1	2	Landing				1.90%	0.00%	-1.60%	5.00	0.08
2	3	Ramp				8.20%	0.00%	-6.97%	14.50	1.01
3	4	Landing				1.90%	0.00%	-2.00%	5.00	0.10
4	5	Ramp				8.20%	0.00%	-4.49%	4.45	0.20
5	6	Landing				1.90%	0.00%	-2.00%	4.99	0.10
6	14	Landing				1.90%	0.00%	-1.79%	5.02	0.09
7	8	Ramp	8.20%		-	0.00%	-8.20%	-8.14%	5.89	-0.48
8	9	Landing	1.90%		-	0.00%	-1.90%	-0.74%	5.38	-0.04
9	10	Ramp				8.20%	0.00%	-7.23%	15.36	1.11
10	11	Landing				1.90%	0.00%	-1.90%	5.27	0.10
11	12	Ramp				8.20%	0.00%	-4.05%	4.69	0.19
12	14	Landing				1.90%	0.00%	-1.90%	5.26	0.10
1	8	Cross Slope				1.90%	0.00%	-0.79%	5.09	0.04
2	9	Cross Slope				1.90%	0.00%	0.00%	5.08	0.00
3	10	Cross Slope				1.90%	0.00%	-1.94%	5.16	0.10
4	11	Cross Slope				1.90%	0.00%	-1.98%	5.06	0.10

INSTRUCTIONS | CADD_DATA | CANNW

Ready

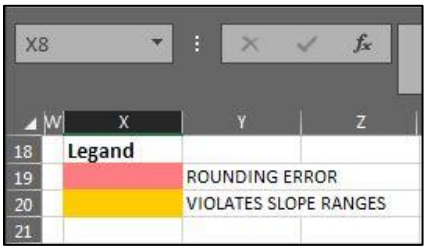
In Table 2. under column M, define slope direction for segments. For example, a segment from 1 to 2 with a slope direction of + indicates that the calculated slope will go up from 1 to 2. Accordingly, a segment from 1 to 2 with a slope direction of - indicates that the calculated slope will go down from 1 to 2. Moreover, if slope direction is left blank, it can go either up or down.

4.7 Running optimization algorithm



Click the CALCULATE button under columns X, Y, and Z to generate the design.
An algorithm is applied attempting to generate elevations for the proposed design that are within allowable slope ranges specified by user.

This algorithm is limited to 40 iterations to save time.
The OPTIMIZE button will continue the iteration process from the 40th iteration onward.

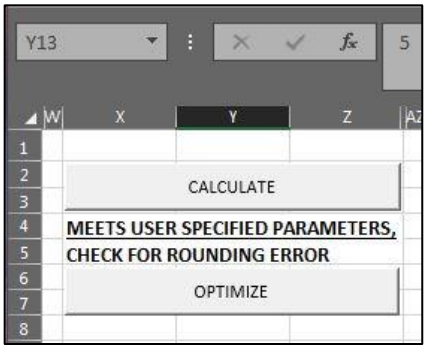


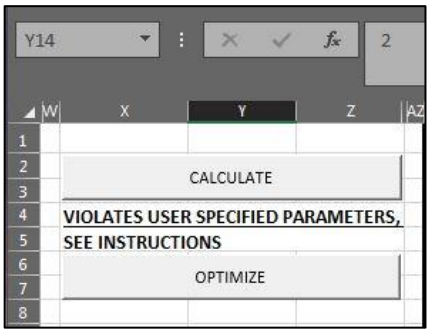
Slopes calculated using generated proposed elevations will either not be highlighted, highlighted in red, or highlighted in yellow.
A red highlight is an indication that the slope is outside slope range specified by user due to rounding error.
A yellow highlight is an indication that the slope is outside slope range specified by user due to feasibility or seeding problem. No highlight indicates slope is within range.

NOTE: it's worth mentioning that the shorter the segment the larger the rounding error.

A message is displayed between the CALCULATE and OPTIMIZE buttons indicative of design status.

4.7.1 Seeding problem



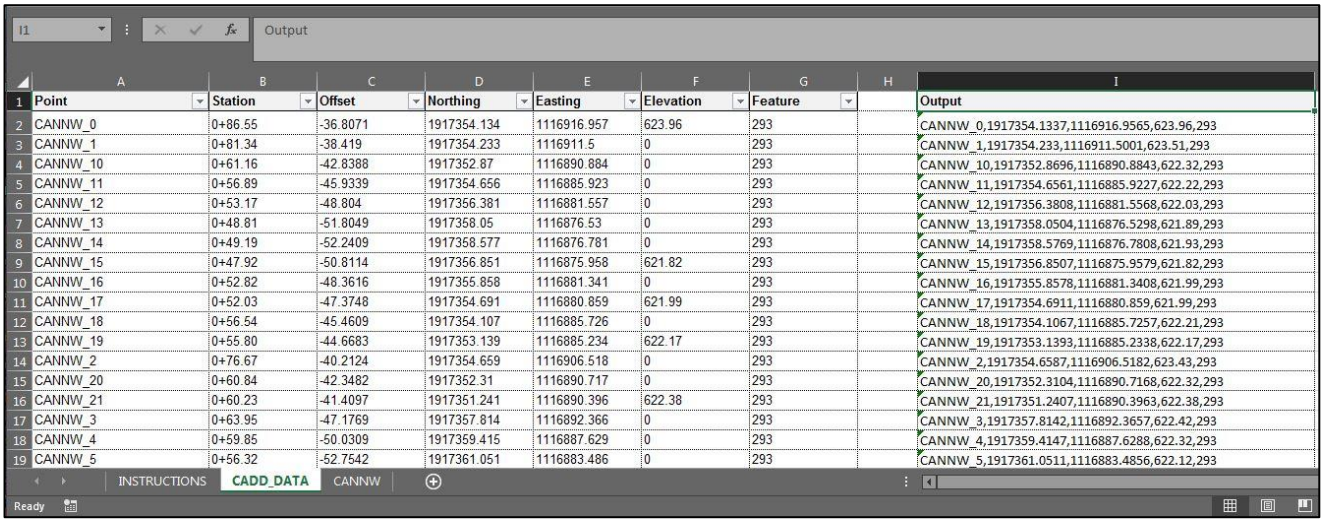


Simply, problem due to seeding can be ruled out by clicking on CALCULATE multiple times, provided after the each run the design violates specified slope ranges.

Every time the CALCULATE button is clicked a random seed, i.e., elevations within the range of existing elevations, is used as a starting point for all elevations in the algorithm. Some random seeds are worse than others leading to the violation of specified slope ranges in some cases. The probability of having a "bad" random seed is about 50% so by running the algorithm multiple times the user can be confident that the violation of slope ranges is NOT due to a bad seed rather, due to feasibility.
A random seed for a starting point is also the reason why the user might come across a case where multiple generated proposed designs meeting user specified slope ranges have different proposed elevations.
However, if the design meets user specified slope ranges that's all that matters.

4.8 Extracting data from ADA Automation Tool

4.8.1 Extracting design data in .txt format



Point	Station	Offset	Northing	Easting	Elevation	Feature	Output
CANNW_0	0+86.55	-36.8071	1917354.134	1116916.957	623.96	293	CANNW_0,1917354.1337,1116916.9565,623.96,293
CANNW_1	0+81.34	-38.419	1917354.233	1116911.5	0	293	CANNW_1,1917354.233,1116911.5001,623.51,293
CANNW_10	0+61.16	-42.8388	1917352.87	1116890.884	0	293	CANNW_10,1917352.8696,1116890.8843,622.32,293
CANNW_11	0+56.89	-45.9339	1917354.656	1116885.923	0	293	CANNW_11,1917354.6561,1116885.9227,622.22,293
CANNW_12	0+53.17	-48.804	1917356.381	1116881.557	0	293	CANNW_12,1917356.3808,1116881.5568,622.03,293
CANNW_13	0+48.81	-51.8049	1917358.05	1116876.53	0	293	CANNW_13,1917358.0504,1116876.5298,621.89,293
CANNW_14	0+49.19	-52.2409	1917358.577	1116876.781	0	293	CANNW_14,1917358.5769,1116876.7808,621.93,293
CANNW_15	0+47.92	-50.8114	1917356.851	1116875.958	621.82	293	CANNW_15,1917356.8507,1116875.9579,621.82,293
CANNW_16	0+52.82	-48.3616	1917355.858	1116881.341	0	293	CANNW_16,1917355.8578,1116881.3408,621.99,293
CANNW_17	0+52.03	-47.3748	1917354.691	1116880.859	621.99	293	CANNW_17,1917354.6911,1116880.859,621.99,293
CANNW_18	0+56.54	-45.4609	1917354.107	1116885.726	0	293	CANNW_18,1917354.1067,1116885.7257,622.21,293
CANNW_19	0+55.80	-44.6683	1917353.139	1116885.234	622.17	293	CANNW_19,1917353.1393,1116885.2338,622.17,293
CANNW_2	0+76.67	-40.2124	1917354.659	1116906.518	0	293	CANNW_2,1917354.6587,1116906.5182,623.43,293
CANNW_20	0+60.84	-42.3482	1917352.31	1116890.717	0	293	CANNW_20,1917352.3104,1116890.7168,622.32,293
CANNW_21	0+60.23	-41.4097	1917351.241	1116890.396	622.38	293	CANNW_21,1917351.2407,1116890.3963,622.38,293
CANNW_3	0+63.95	-47.1769	1917357.814	1116892.366	0	293	CANNW_3,1917357.8142,1116892.3657,622.42,293
CANNW_4	0+59.85	-50.0309	1917359.415	1116887.629	0	293	CANNW_4,1917359.4147,1116887.6288,622.32,293
CANNW_5	0+56.32	-52.7542	1917361.051	1116883.486	0	293	CANNW_5,1917361.0511,1116883.4856,622.12,293

CADD_DATA tab under column I is populated automatically with proposed design information. Once the proposed design is determined compliant, information is ready to be copied out to a .txt file format as will be explained in the next step (Step 5).

4.8.2 Extracting plan preparation data

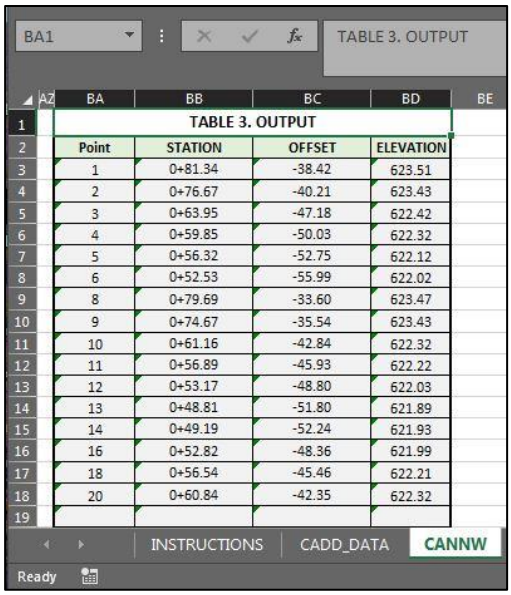


TABLE 3. OUTPUT			
Point	STATION	OFFSET	ELEVATION
1	0+81.34	-38.42	623.51
2	0+76.67	-40.21	623.43
3	0+63.95	-47.18	622.42
4	0+59.85	-50.03	622.32
5	0+56.32	-52.75	622.12
6	0+52.53	-55.99	622.02
8	0+79.69	-33.60	623.47
9	0+74.67	-35.54	623.43
10	0+61.16	-42.84	622.32
11	0+56.89	-45.93	622.22
12	0+53.17	-48.80	622.03
13	0+48.81	-51.80	621.89
14	0+49.19	-52.24	621.93
16	0+52.82	-48.36	621.99
18	0+56.54	-45.46	622.21
20	0+60.84	-42.35	622.32

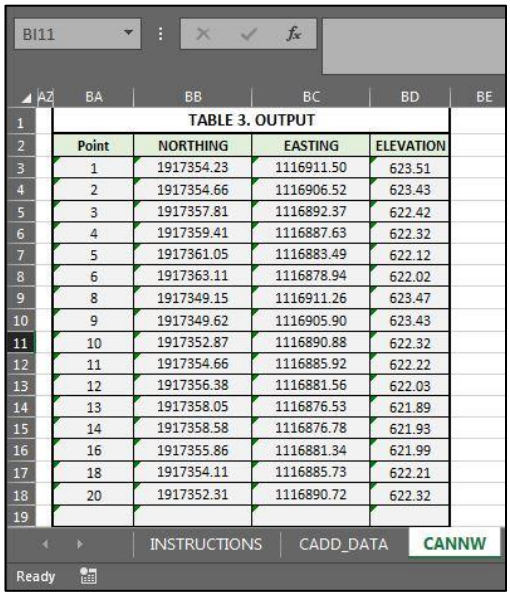


TABLE 3. OUTPUT			
Point	NORTHING	EASTING	ELEVATION
1	1917354.23	1116911.50	623.51
2	1917354.66	1116906.52	623.43
3	1917357.81	1116892.37	622.42
4	1917359.41	1116887.63	622.32
5	1917361.05	1116883.49	622.12
6	1917363.11	1116878.94	622.02
8	1917349.15	1116911.26	623.47
9	1917349.62	1116905.90	623.43
10	1917352.87	1116890.88	622.32
11	1917354.66	1116885.92	622.22
12	1917356.38	1116881.56	622.03
13	1917358.05	1116876.53	621.89
14	1917358.58	1116876.78	621.93
16	1917355.86	1116881.34	621.99
18	1917354.11	1116885.73	622.21
20	1917352.31	1116890.72	622.32

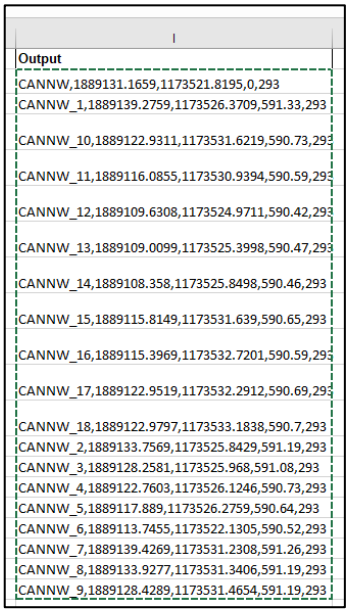
Table 3. under columns BA to BD, is an output table for plan-preparation purposes available with proposed design information.

Through a drop-down menu, STATION and OFFSET can be changed to NORTHING and EASTING, as needed.

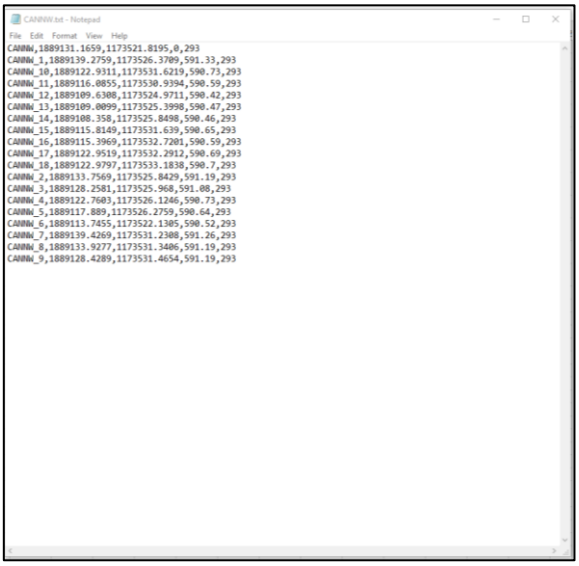
5. Importing Design Points from ADA Automation Tool into CADD

Data for proposed design is exported from ADA Automation Tool and imported into CADD using the following steps:

5.1 Saving extracted data



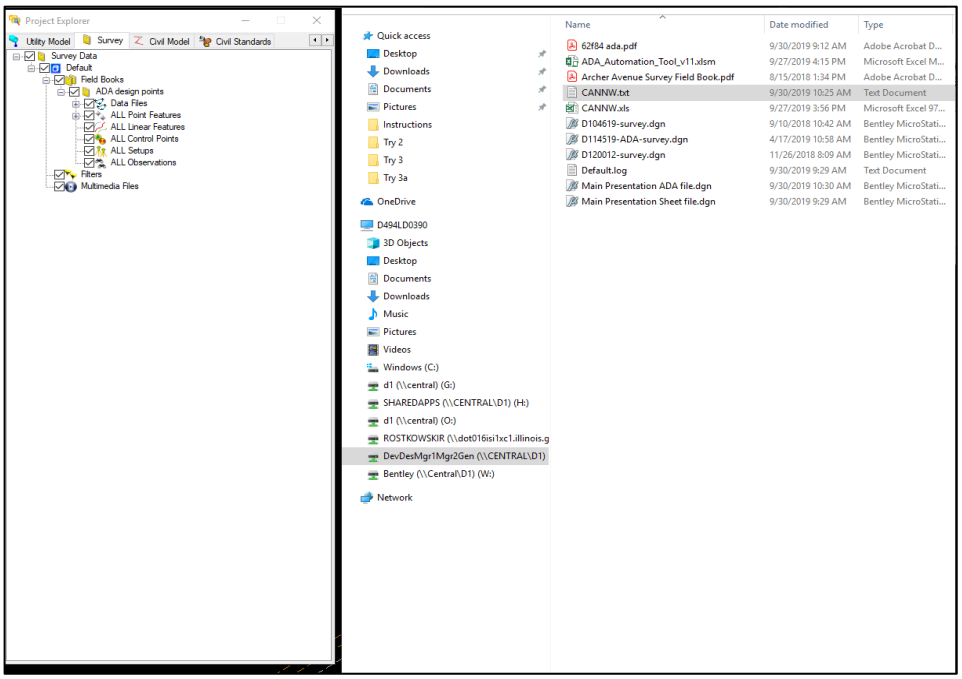
I
Output
CANNW,1889131.1659,1173521.8195,0,293
CANNW_1,1889139.2759,1173526.3709,591.33,293
CANNW_10,1889122.9311,1173531.6219,590.73,293
CANNW_11,1889116.0855,1173530.9394,590.59,293
CANNW_12,1889109.6308,1173524.9711,590.42,293
CANNW_13,1889109.0099,1173525.3998,590.47,293
CANNW_14,1889108.358,1173525.8498,590.46,293
CANNW_15,1889115.8149,1173531.639,590.65,293
CANNW_16,1889115.3969,1173532.7201,590.59,293
CANNW_17,1889122.9519,1173532.2912,590.69,293
CANNW_18,1889122.9797,1173533.1838,590.7,293
CANNW_2,1889133.7569,1173525.8429,591.19,293
CANNW_3,1889128.2581,1173525.968,591.08,293
CANNW_4,1889122.7603,1173526.1246,590.73,293
CANNW_5,1889117.889,1173526.2759,590.64,293
CANNW_6,1889113.7455,1173522.1305,590.52,293
CANNW_7,1889139.4269,1173531.2308,591.26,293
CANNW_8,1889133.9277,1173531.3406,591.19,293
CANNW_9,1889128.4289,1173531.4654,591.19,293



```
CANNW,1889131.1659,1173521.8195,0,293
CANNW_1,1889139.2759,1173526.3709,591.33,293
CANNW_10,1889122.9311,1173531.6219,590.73,293
CANNW_11,1889116.0855,1173530.9394,590.59,293
CANNW_12,1889109.6308,1173524.9711,590.42,293
CANNW_13,1889109.0099,1173525.3998,590.47,293
CANNW_14,1889108.358,1173525.8498,590.46,293
CANNW_15,1889115.8149,1173531.639,590.65,293
CANNW_16,1889115.3969,1173532.7201,590.59,293
CANNW_17,1889122.9519,1173532.2912,590.69,293
CANNW_18,1889122.9797,1173533.1838,590.7,293
CANNW_2,1889133.7569,1173525.8429,591.19,293
CANNW_3,1889128.2581,1173525.968,591.08,293
CANNW_4,1889122.7603,1173526.1246,590.73,293
CANNW_5,1889117.889,1173526.2759,590.64,293
CANNW_6,1889113.7455,1173522.1305,590.52,293
CANNW_7,1889139.4269,1173531.2308,591.26,293
CANNW_8,1889133.9277,1173531.3406,591.19,293
CANNW_9,1889128.4289,1173531.4654,591.19,293
```

As briefly mentioned in sub-step 4.8.1, CADD_DATA tab under column I has proposed design information ready to be imported into CADD after it is copied into a .txt file format.

5.2 Importing extracted data into CADD

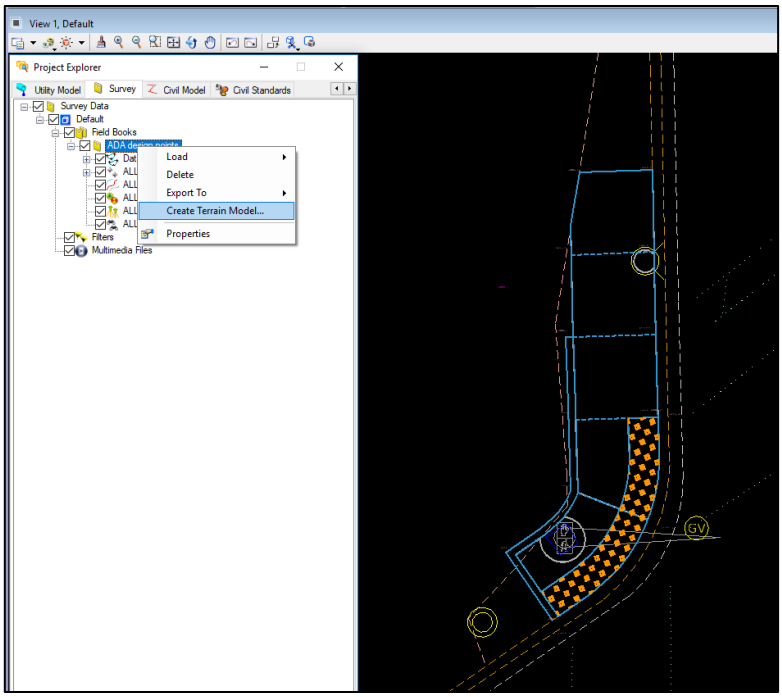


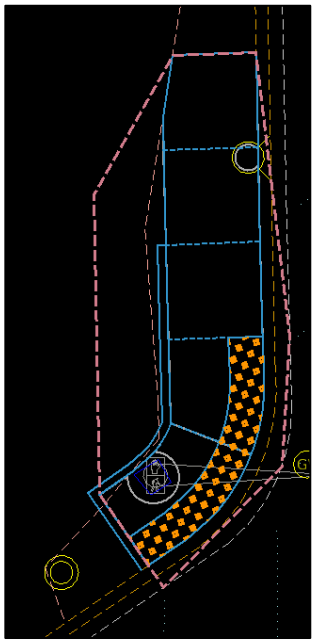
Once .txt file is saved, next step is importing the .txt file into CADD. This is done by dragging the .txt file and dropping it in the Project Explorer under Field Books.

If a .txt file already exists for the same corner in the Field Book, delete it before importing the .txt file into CADD.

Once dropped, prompts will ask for format and override options. The format must be IDOT D1-Comma-PtNumNEZCodeCode. Then override all.

5.3 Creating a terrain model

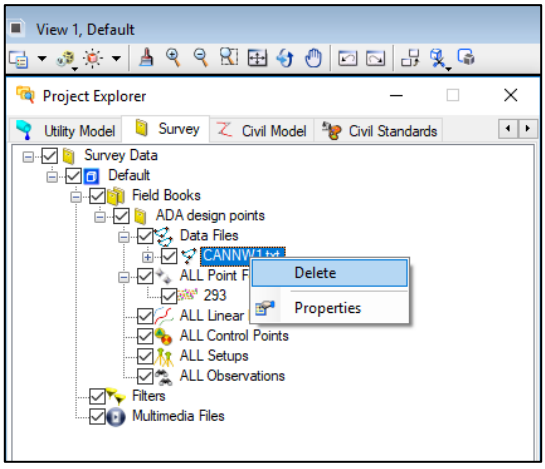


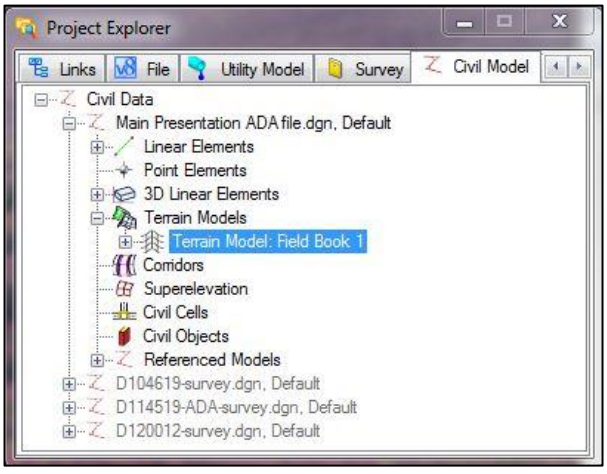


Once data is imported into CADD, next step is to create a terrain from imported data. This is done by clicking on Project Explorer −> right click on Field Books −> Create Terrain Model. The terrain model should show as seen in second image above. If the terrain doesn't show, check if Terrain EX level and Terrain Ex Exterior are turned on.

If a Terrain Model already exists for the Field Book in Project Explorer under Terrain Models in the Civil Model tab, delete the Terrain Model and recreate it using data imported to the Field Book.

5.3.1 Overwriting imported data



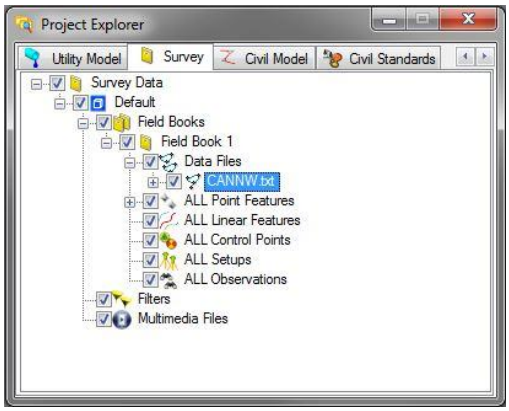


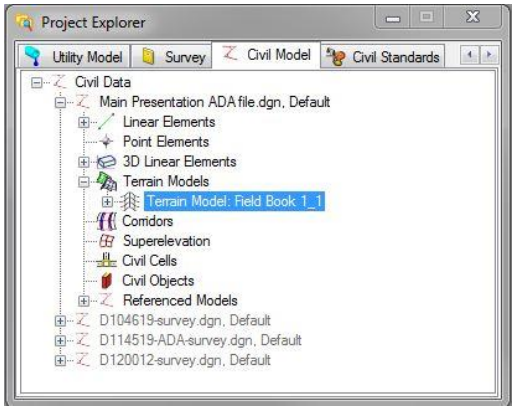
To overwrite the imported data, one must delete the .txt file in Project Explorer under Field Books in the Survey tab. In addition, the terrain must be deleted in Project Explorer under Terrain Models in the Civil Model tab.

5.4 Modify Design (as needed)

The design can be modified by adding, removing or relocating design points as needed using the following steps:

1. Modify geometric design
2. Create or move design points as needed to match modified design (Step 2: Creating Design Points)
3. Export points (Step 3: Exporting Points into ADA Automation Tool)
4. Overwrite all points (in CADD_DATA tab of ADA Automation Tool)
5. Update design points and segments (in redesigned corner tab of ADA Automation Tool)
6. In CADD, delete text file and terrain model in Project Explorer (as they will be replaced/recreated)





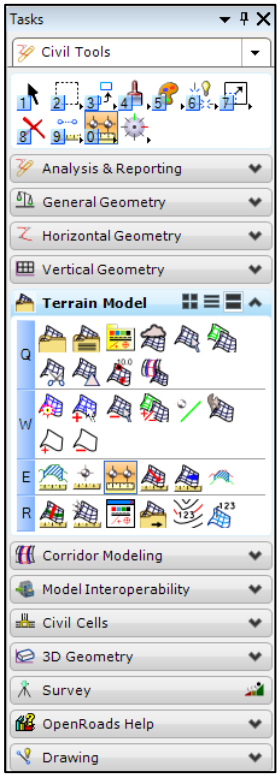
7. Import points into CADD and recreate the terrain model (Step 5: Importing Points from ADA Automation Tool into CADD)

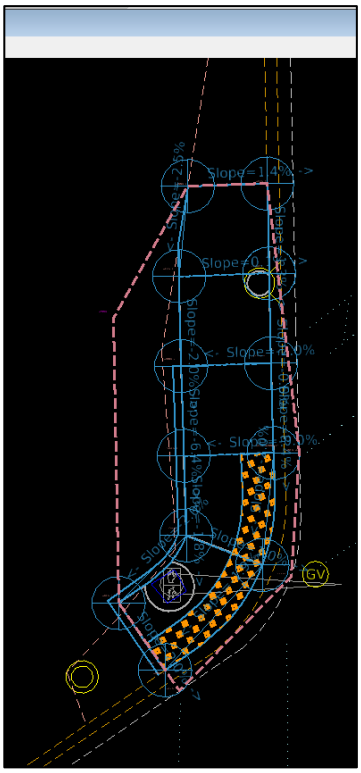
NOTE: cross-validate terrain model elevations with spreadsheet elevations to ensure the terrain model has updated with revised elevations.

6. Labeling Design

Labeling data for proposed design is performed in CADD using the following steps:

6.1 Labeling slopes for proposed design

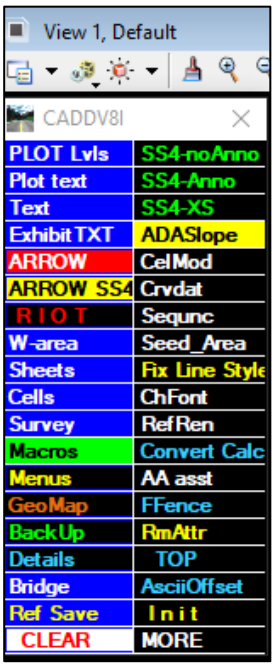


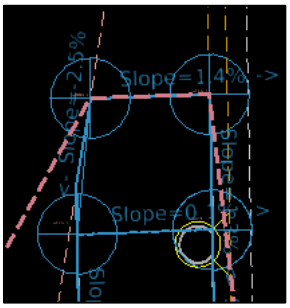


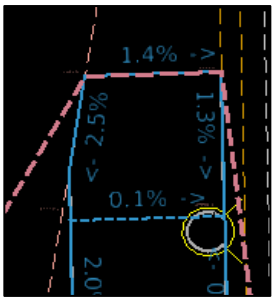
Set active level to Level 47 and use the Analyze Between Points tool to create rough labels for sidewalk slopes.

The Analyze Between Points tool is located under the Civil Tools task tab −> Terrain model. Select the newly created terrain model when prompted. The terrain model is an object referenced in from the 3D model in the same file under the TERRAIN_EX and TERRAIN_EX_ EXTERIOR levels. When creating slope labels for crosswalks be sure to select the existing terrain model from the survey file instead.
Make sure nothing important is drawn in level 47 (other than slope labels) as it will be modified by a macro in the following step.

6.1.1 Cleaning up labeled slopes



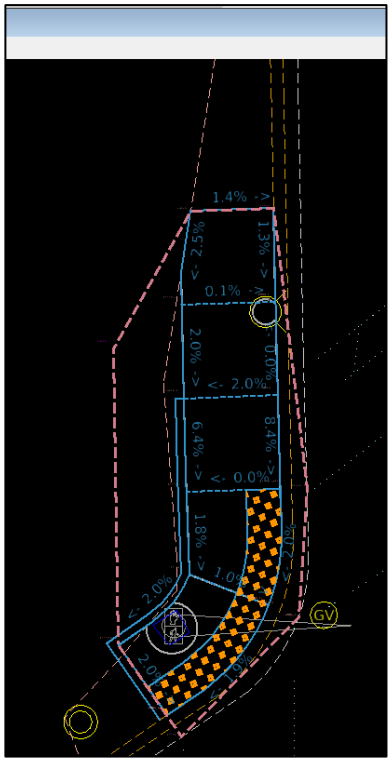


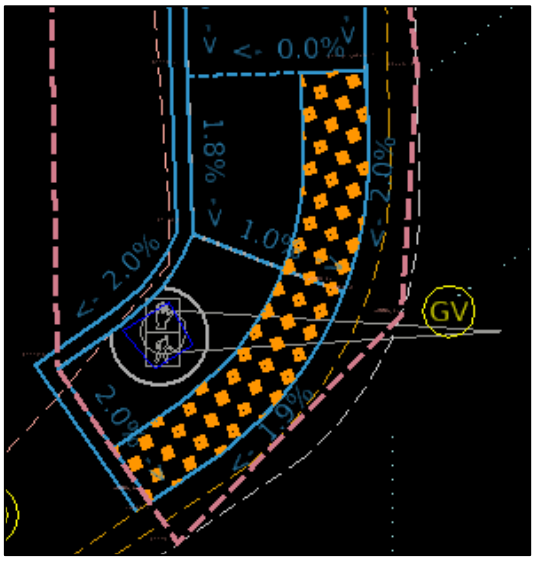


Delete the extra lines and "Slope=" text by running the ADASlope macro from the D1 Blue Menu. The ADASlope macro is found under the Blue Menu −> Macros. This macro deletes all lines and arcs from level 47 and finds and replaces all "Slope=-" and "Slope=" with a blank. This step can be done manually if a macro is not available.

The formatting of the output of this tool is controlled by the active text style and Design file settings. To change the text format, select the standard Place Text tool and select the desired text style. To change the precision, go to Slope Precision option under Settings −> Design file −> Civil Formatting −> Profile Settings Tab.

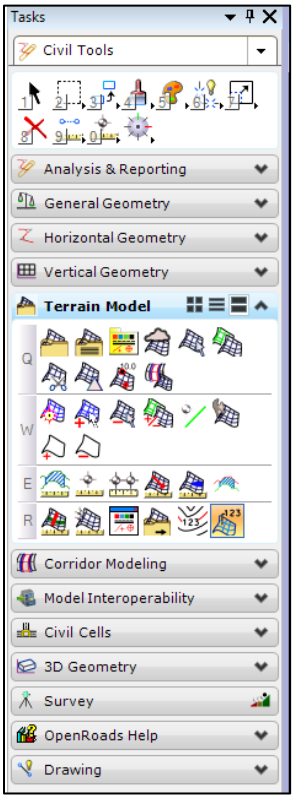
6.1.2 Adjusting label location

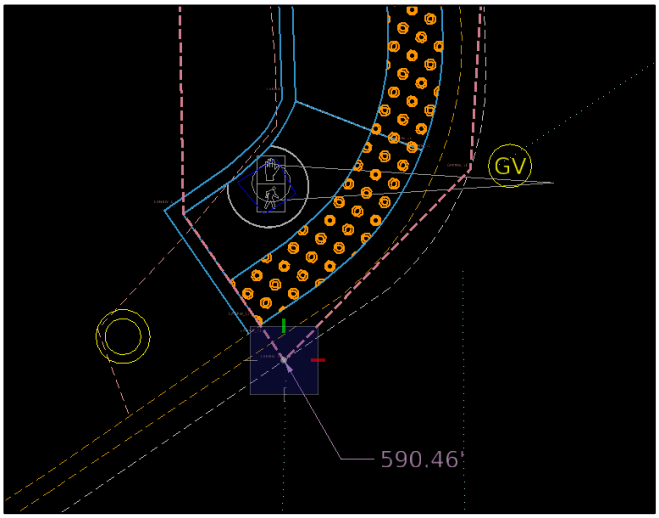




Fine tune the location of the sidewalk slope labels as needed. This can be done by manually moving labels to desired location.

6.2 Labeling elevations for proposed design

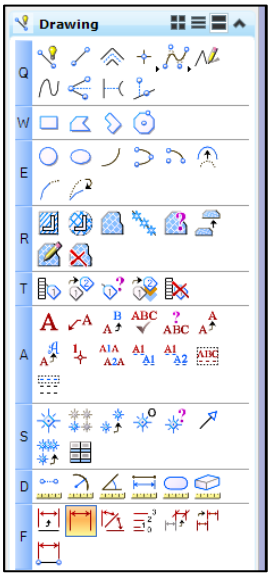


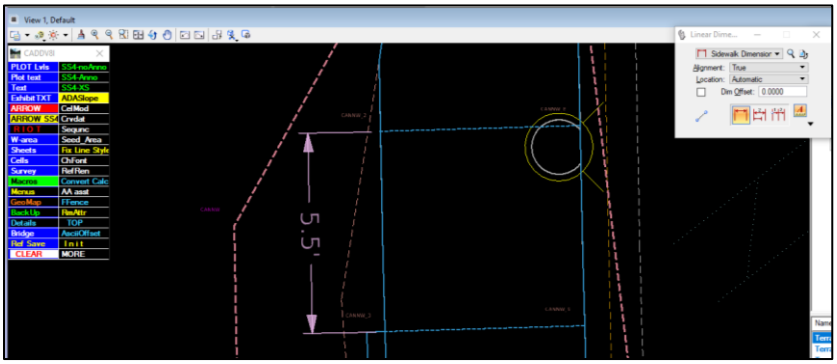


Use the Label Terrain Spots tool, under the Civil Tools task tab −> Terrain. Select the new terrain model when prompted −> Click on the existing design point −> Click to place label.

Set the active level to an appropriate level other than level 47 and label point elevations using the Label Terrain Spots tool. The formatting of the output of this tool is controlled by the active text style, active dimension style, and the Design file settings. The text and dimension styles are controlled in the same way as the standard Place Note tool through the Label Terrain Spot Toolbox. To change the precision, go to Elevation Precision option under Settings −> Design file −> Civil Formatting −> Profile Settings Tab.

6.3 Labeling dimensions of proposed design





Dimension labeling is done using the standard Dimension Linear tool.

7. Troubleshooting

7.1 Snapping malfunction

Problem: snapping tool not functioning properly when placing newly created points (points not snapping, MicroStation crashing etc.)
Solution: turn off snaps while placing new points, then turn on snaps to modify point location.

7.2 Design point disappearance

Problem: newly created points are disappearing as they're being created.
Solution: turn off snaps while placing new points.

7.3 Design point information

Problem: point information not updating when imported into CADD.
Solution: in Project Explorer delete .txt file and terrain model. Reimport design data from ADA Automation Tool. Also, sometimes restarting MicroStation might help. As a last resort, delete the points as well as the text file and terrain model in the project explorer before reimporting the points from the text file. Be aware that doing so changes the behavior of the points. For example, now deleting the text file from project explorer will also delete the points.

7.4 Terrain display

Problem: created terrain not displaying.
Solution: use proper Feature Definition for creating points, i.e., 293, and turn on levels Terrain Ex and Terrain Ex Exterior.

7.5 Spreadsheet is slow

Problem: ADA Automation Tool is slow.
Solution: create a new copy of the file.

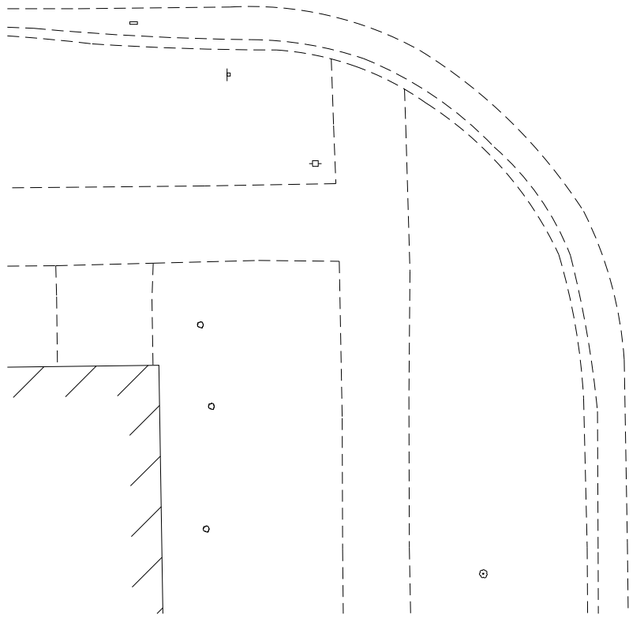
8. Contact Information

Ahmad Nafakh
Ahmad.Nafakh@illinois.gov
Bureau of Design
IDOT District 1

Radoslaw Rostkowski
Radoslaw.Rostkowski@illinois.gov
Bureau of Design
IDOT District 1

EXISTING SIDEWALK

E. 160th STREET

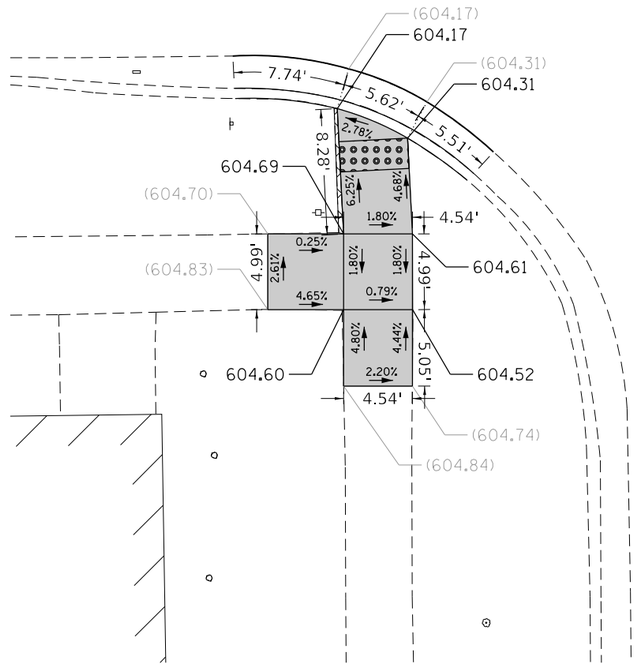


S. HALSTED STREET

PROPOSED SIDEWALK

DETAIL FROM CONTRACT 62J02 FINAL PLANS
(JULY 2019 LETTING)

E. 160th STREET



MODEL: Default
FILE NAME: pw:\\planroom.dot.illinois.gov:PWIDOT\Documents\IDOT Offices\District 1\Projects\D1145191\CADData\Design\D1145191-ent-detail001.dgn

USER NAME = rostkowskir	DESIGNED -	REVISED -	
	DRAWN -	REVISED -	
PLOT SCALE = 10.0000 ' / in.	CHECKED -	REVISED -	
PLOT DATE = 10/25/2019	DATE -	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXPLANATION OF STEPS

SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
876	2019-024-RS	COOK	1	1
		CONTRACT NO. 62J02		
		ILLINOIS FED. AID PROJECT		