

Part 600 Curb Ramp Details

Section 601 Introduction

Curb ramp details play an important role in conveying the design to the contractor for successful construction and compliance with the ADA standards. Minor variations in constructed curb ramps may result in rejection or rework of the constructed curb ramp based on workmanship when details and precision are not provided. As such, a separate curb ramp detail sheet is the standard and required for each curb ramp location. Providing specific project details for each proposed curb ramp is a method for conveying the unique complexities of curb ramp design and construction to the contractor at each site.

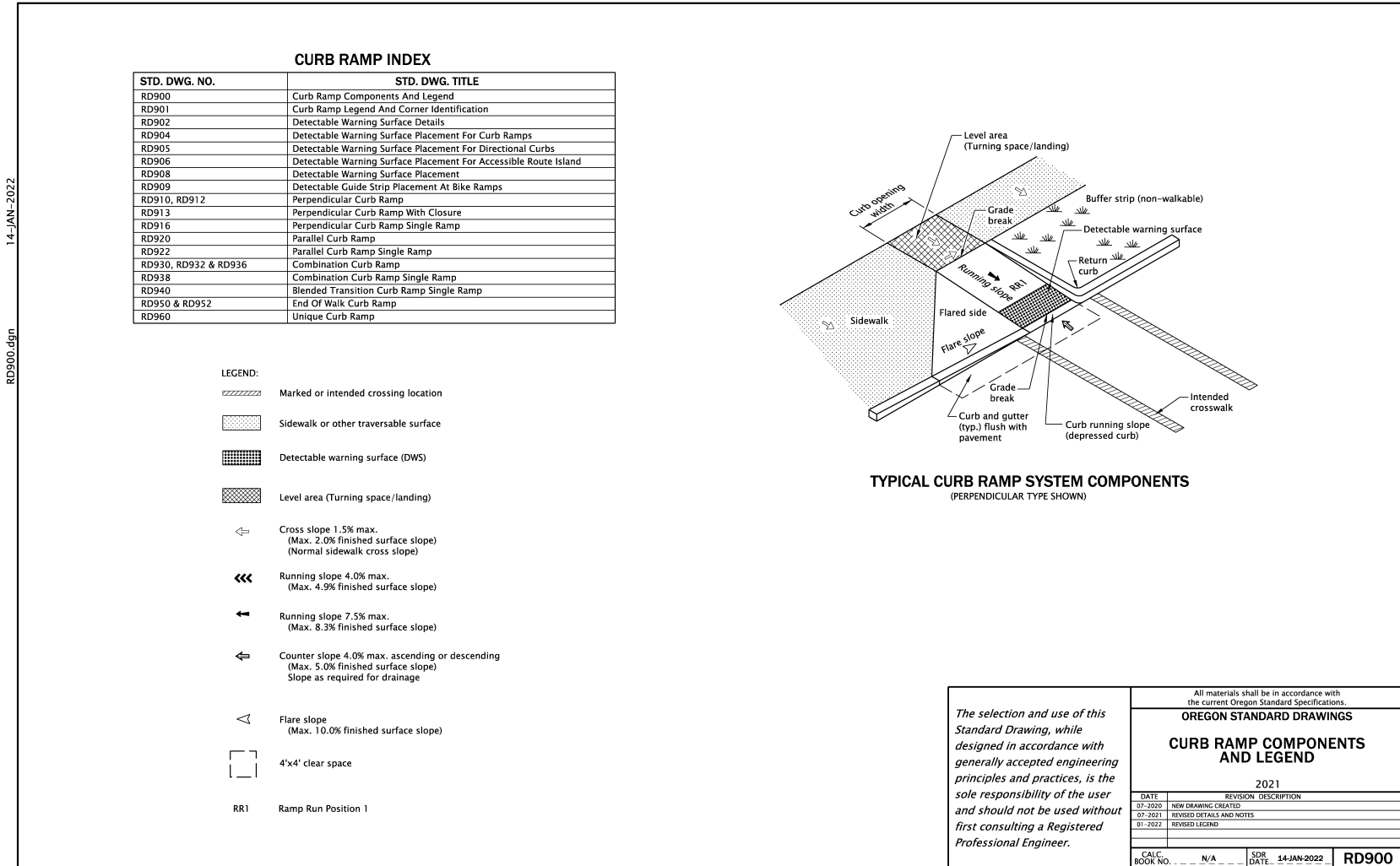
In addition to the curb ramp details standards in this Part 600, projects of limited scope with primarily curb ramp only construction under the ADA Program Unit require the ADA Program Logo to be placed on the project title sheet (see the [Tech Bulletin RD22-02\(B\)](#)). See 601.3 and RCM Part 300, Section 303.1 for more information.

In addition to the Standard Drawings and Standard details referenced in this Part, see [Part 800 of the ODOT Highway Design Manual \(HDM\)](#) for pedestrian design standards.

601.1 Standard Drawings

Oregon Standard Drawings in the [RD900 series](#) (primarily RD900 and RD901) are backbone guidance to help develop project specific curb ramp details. See Figure 600-1 and Figure 600-2. Please note that the figures in this document may not reflect the latest versions. Always use the latest version of standard drawings from the [Roadway Standard Drawings webpage](#).

Figure 600-1: Standard Drawing RD900



Effective Date: June 1, 2023 – November 30, 2023

Figure 600-2: RD901 - Curb Ramp Legend and Corner Identification

Linear Referencing Method (LRM) Number
Use ODOT TransGIS, turn on layers Roadside > ADA corners and ADA Ramps to see LRM and corner position number of curb ramps inventoried. Select "Identify Features" and click on Map Position to see information.

This is a code to identify the intersection on a specific state Highway. There is a four part format for the code: Highway Number; Highway Suffix; Roadway ID, Mileage Type.

- 1) The Highway Number is a 3 digit number (not the route number) assigned to all state highways by ODOT. Valid numbers are 001-493.
- 2) Highway Suffix is a letter format assigned to frontage roads and connections to identify the unique connection, for example AA or AB. Use the Identify Features tool on the ODOT Trans GIS Road Network layer > Hwy Network-Colored layer for visual reference. Select "Identify Features" and click on Map Position to see information. If the intersection is not located on a connection use 00 for the code.
- 3) Roadway ID is a one letter code used to identify alignment. There are two possible letter codes; "I" for increasing mile point direction and "D" for decreasing mile point direction. For most highways, the "I" direction is south and east. Note 1-5 does not follow this rule. Generally "I" will be used. When there is a separated highway there will be an "I" roadway and a "D" roadway. Check the Digital Video Log to be sure of the direction.
- 4) Mileage Type is used when there are multiple locations of the same mile point on a section of highway. Overlay lapping mileage is listed as "z" mileage.

Example

228	00	I	00
Hwy No.	ID	Suffix	Type

Milepoint of an intersection is based on the mile point of the center of the intersection listed to the hundredth of a mile.

Corner Position is based on traveling in the increasing mile point direction, beginning with the first corner on the right and proceeding counter-clockwise around the intersection, numbering consecutive 1 through the end of corners. An "A" is added to the number for an island. For example an island between corner positions 1 and 2 and is closer to corner 2 has a corner position number of 2A (See corner position and curb ramp position diagram).

Curb Ramp Position is a number given to each curb ramp beginning with Corner Position 1. The first curb ramp encountered in the increasing mile point direction is number ramp 1. Then proceeds counter-clockwise around the corner, numbering in consecutive order. Proceed following the pedestrian route and in Corner Position Number order (see corner position and curb ramp position diagram).

CORNER POSITION AND CURB RAMP POSITION DIAGRAM
(See ODOT Exhibit A for additional ramp and ramp run numbering conventions.)

STANDARD ABBREVIATION FOR CURB RAMP DETAILS

FG = Finish Grade (Elevation ft.) i.e. FG XXX.XX'	TFC = Top Face of Curb (Elevation ft.)	TBC = Top Back of Curb (Elevation ft.)	BFC = Bottom Face of Curb (Elevation ft.)	gtr. = Gutter (Elevation ft.)	GS = Gutter Slope (%), i.e. X.X%	E = Curb Exposure (Inch), i.e. X"	CS = Counter Slope on gutter pan (%)	RRN = Ramp Run Number, i.e. RRX	cl.sp. = Clear Space	TS = Turning Space	XS = Cross Slope	LA = Level Area	DWS = Detectable Warning Surface	PAR = Pedestrian Access Route
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INTERSECTION CONDITION TYPES

MB = Midblock	SU = Signalized or Uncontrolled	SY = Stop or Yield
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LEGEND:

	Fire Hydrant		Sign on a Post
	Gas Valves Box		Traffic Signal Junction Box
	Inlet		Utility Pole
	Sanitary Manhole		Utility Vault
	Storm Manhole		Water Meter
	Pole Anchor		Water Valve
	Pole Base		Cross Walk Barricade
	Pedestrian Pedestal		
	Pedestrian Pushbutton		

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

CURB RAMP LEGEND AND CORNER IDENTIFICATION

2021

DATE	REVISION	DESCRIPTION
07-2020	NEW DRAWING CREATED	
09-2021	REVISED NOTES	
CALC BOOK NO.	N/A	SDR DATE: 14-JAN-2022

RD901

Effective Date: June 1, 2023 – November 30, 2023

601.2 Curb Ramp Standard Details

ODOT has developed the following standard details to help project teams develop curb ramp plan sheets:

- DET1720 Example of Minimum Curb Ramp Detail Instruction
- DET1721 Example of Minimum Curb Ramp Details
- DET1752 Curb Ramp Curb and Gutter
- DET1753 Curb Transitions
- DET1771 Pedestrian Crossing Details

The standard details are shown in Figure 600-3 through Figure 600-7. Please note that the figures in this document may not reflect the latest versions. Always use the latest version of standard details from the [Roadway Standard Details webpage](#). Standard details cannot be included in the plan set as standalone document. The contents of the drawings may be added to project plan sheets and may be modified for any given project, where the engineer of record assumes responsibility for the drawing under their professional seal. Plan sheets using contents of the standard details must be sealed by the Engineer of Record. See 602.1 Curb Ramp Detail Sheet Process and Figure 600-3: DET1720 Example of Minimum Curb Ramp Details Instructions.

Figure 600-3: DET1720 Example of Minimum Curb Ramp Details Instructions

These items represent the tables, additional details and information for curb ramp details.

TABLE 1 (OPTIONAL)
(Modify as Required)

Location	Station	Offset	Descr.	Elevation (ft)	E (in)
#	CR"XX" X+XX.XX	XX.XX	FG	XX.XX	X
#					
#					
#					
#					
#					
#					
#					
#					
#					
#					

DETAIL SHEET REQUIREMENTS (Designer Notes):

1. Each curb ramp is given a unique identifier based on ODOT's Linear Referencing Method (LRM), mile point, a corner number, and ramp position. ODOT's inventory displays the unique identifier which can be found on ODOT's Roadside Layer>ADA ramps with the information icon. For new intersections or reconfigured intersections with curb ramps, refer to ODOT's Exhibit A for determining the corner number and ramp position. When more than one curb ramp is shown, label the curb ramps number.
2. All data fields must be filled in the curb ramp title block. Indicate "N/A" if there are no design exceptions or crossing closures. Label components of the curb ramp with approved design exception values in enlarged and bold text with the prefix of "DE".
3. Concurrence initials are required on the final curb ramp detail from the structural designer when the curb ramp is integrated with a bridge, moment slab, retaining wall, or bridge railing.
4. Concurrence initials are required on the final curb ramp detail from the signal designer when the curb ramp includes a signal or pedestrian push button, or crossing closure.
5. Provide a construction control alignment on the curb ramp detail, which is identified by "CRXX" and normally at the gutter flow line. Number each corner control line consecutively throughout the project limits. Generally, one control alignment is assigned per corner, island or median island. Islands may have a control alignment "CRXX" that is relative to or on the street.
6. Curb ramp line styles, line weights, and patterns shall be shown utilizing ODOT's pen table for curb ramps details.
7. Curb ramp design slopes and widths are shown on the plan view of the of the curb ramp layout. Label constrained width areas. Label transition panels when included. Label R/W when sidewalk construction is constrained by property lines.
8. Construction control alignment points are flagged along the alignment. The match points and radius points are identified on the control line. Data tables can be used to list station, offset, and elevation information for clarity. Profile alignments are optional. Additional curb ramp detail information may be required on a second detail sheet for clarity of content.
9. Scales of 1"=5' are preferred (1 corner per sheet) and 1"=10' is permissible (2 corners per sheet). Include the scale of the curb ramp detail . Draft curb ramp with the same orientation as the general construction layout.
10. Existing and proposed utilities, signs and signal poles features are shown to scale utilizing ODOT's curb ramp detail menu symbols. Include proposed signal pole, pedestrian pole, push buttons and closure sign supports. Use ODOT's pen table for curb ramps details.
11. Pattern level surface areas, additional area may be required to provide access to pedestrian pushbutton(s). Use the wheelchair design vehicle to verify access to the pedestrian push button(s) as shown in the Signal Design Manual.
12. Include curb detailing when site is unique and is not otherwise provided by DET1752.

CURB DETAIL
(Provide when specific design is required)

PROFILE TABLE (OPTIONAL)

Location	Station	Gtr Elevation (ft)	E (in)
1	CR"XX" X+XX.XX	XX.XX	X
2			
3			
4			
5			
6			
7			
8			
9			
10			

PROFILE (OPTIONAL)

The selection and use of this detail, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON DEPARTMENT OF TRANSPORTATION
TECHNICAL SERVICES
DETAILS

EXAMPLE OF MINIMUM
CURB RAMP DETAILS INSTRUCTIONS

DETAIL NO.
DET1720

det1720.dgn 19-OCT-2020

DET1720

Figure 600-4: DET1721 Example of Minimum Curb Ramp Details

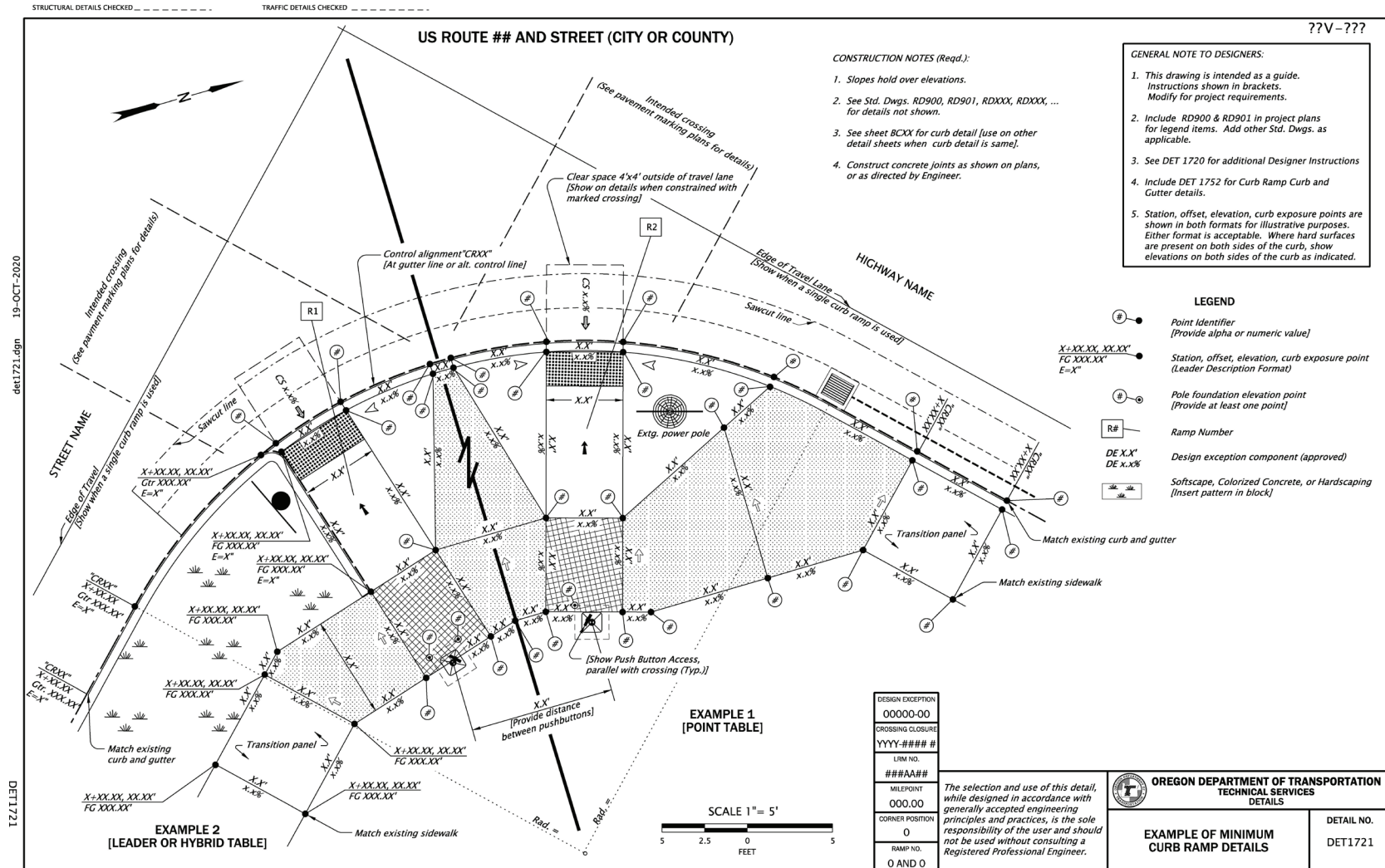


Figure 600-5: DET1752 Curb Ramp Curb and Gutter

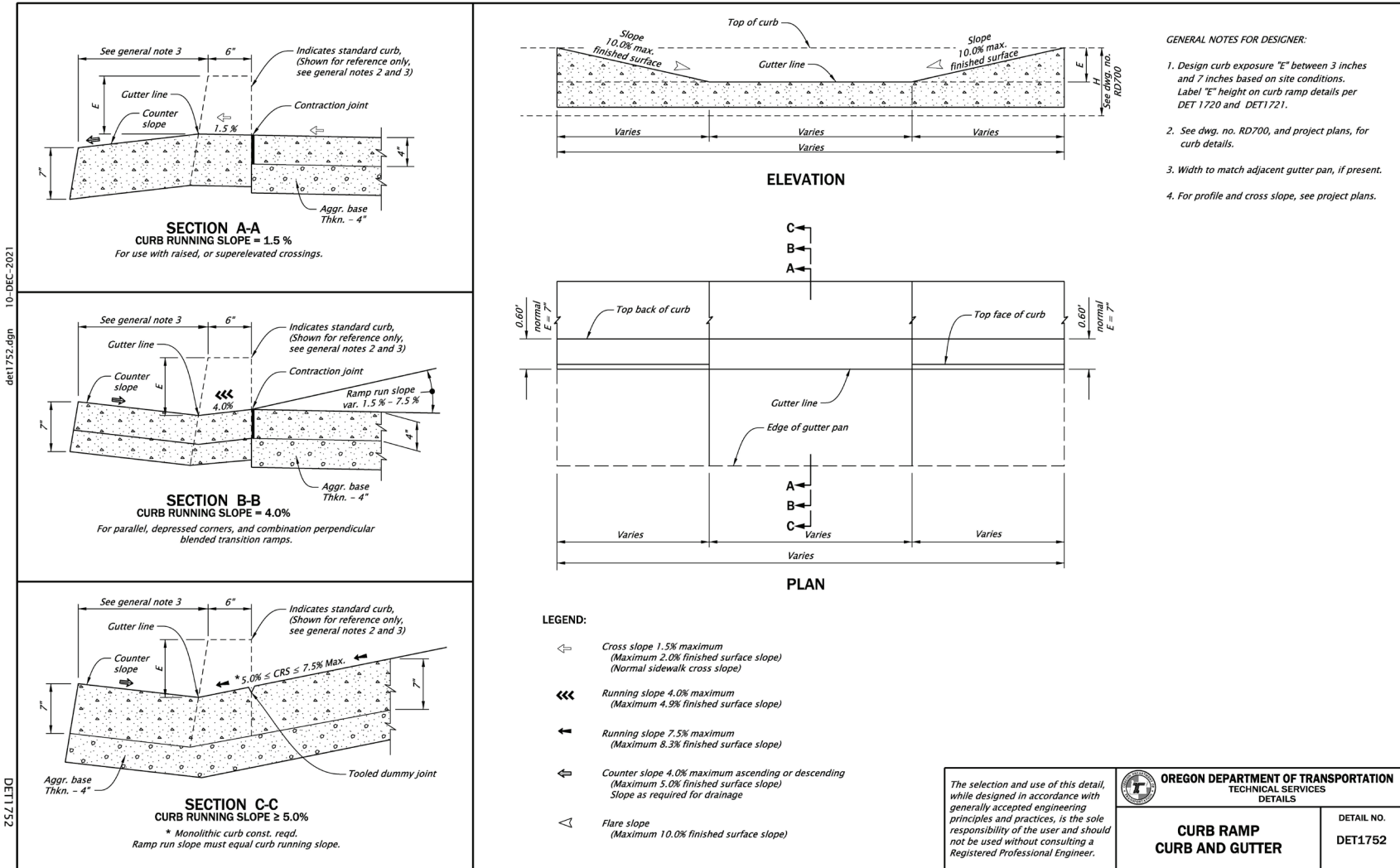
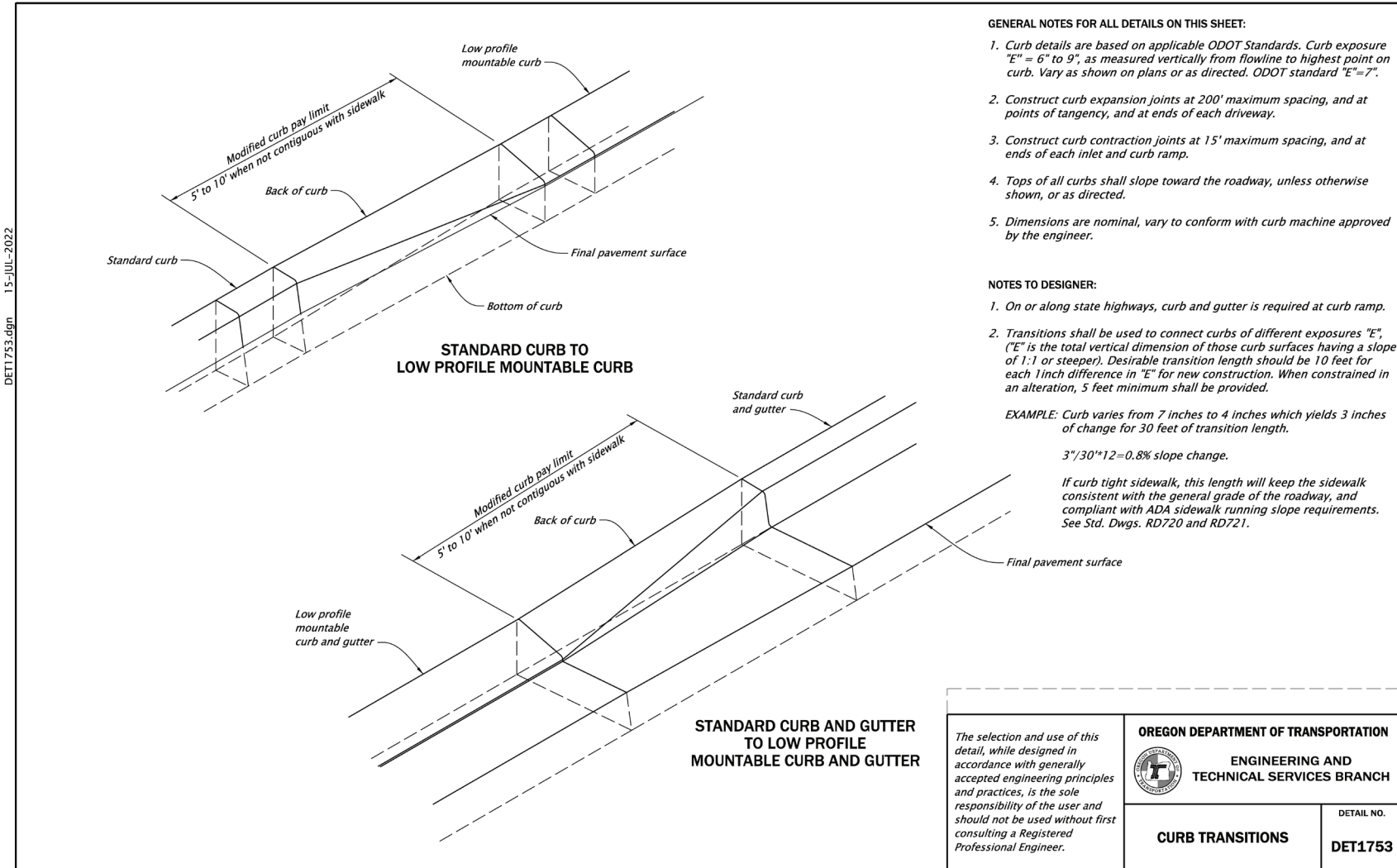


Figure 600-6: DET1753 Curb Transitions



601.3 ADA Curb Ramp Only Projects

ADA Curb Ramp Only Projects, as defined in the [ODOT Technical Bulletin RD22-02\(B\)](#), are projects where the scope of work is solely focused on reconstruction of curb ramps on or along the state highway that are identified in the ODOT settlement inventory requiring remediation by the year 2032.

The ADA Program Unit projects have limited scope and do not include other transportation system upgrades. Projects with a variety of funding (ADA Program unit plus another funding source) are not identified as ADA Curb Ramp Only projects unless approved by FHWA and the ADA Program Manager. ADA Curb Ramp Only projects are still required to have curb ramps meeting ODOT's applicable standards at final construction.

An ADA Program logo was created to identify ADA Curb Ramp Only projects (see Figure 600-8).

Figure 600-8: ADA Program Logo



For ADA Curb Ramp Only projects, place the ADA Program Logo on the plan set title sheet.

ADA Curb Ramp Only projects are not required to include the phrase “ADA Program Funded” or “ADA Curb Ramp Only” in the project section name.

ADA Curb Ramp Only Projects may have different construction detail requirements. However, utilizing ODOT CAD standards to the maximum extent practical ensures consistency, improves readability, and improves understanding for the bidders, contractors, and others within the department.

Section 602 Curb Ramp Details Sheets

602.1 Curb Ramp Detail Sheet Process

Each curb ramp detail sheet shall conform to the following:

1. Provide a unique identifier based on ODOT's Linear Referencing Method (LRM), milepoint, corner number, and ramp position. ODOT's FACS-STIP application displays

the unique identifier. Refer to Section 602.16 for detailed instructions on finding unique identifier. Local system curb ramps will not have a unique identifier in FACS-STIP.

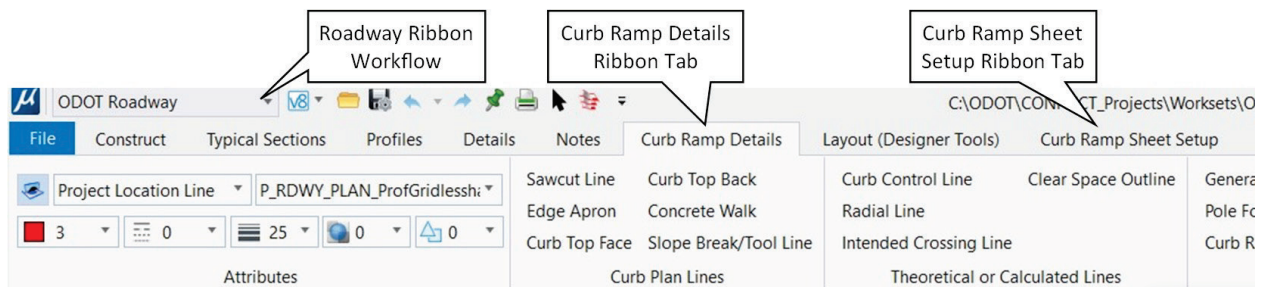
2. For new intersections, refer to [ODOT's Exhibit A](#) for determining the corner number and ramp position. If more than one curb ramp is shown within one detail sheet, then label the curb ramp position number. New corner positions or ramp positions will be assigned in the GIS database after the construction is completed and final passing inspection forms are turned in. Contact the Statewide Asset Specialist for questions or for unique intersections.
3. For reconfigured intersections with curb ramps, the corner positions identified in the inventory will remain the same as shown in FACS-STIP. New or revised corner positions or ramp positions will be assigned in the GIS database after the construction is completed and final passing inspection forms are turned in. It may take up to 6 months to be reflected in the inventory. Contact the Statewide Asset Specialist for questions.
4. All data fields must be filled in the curb ramp title block. Indicate "N/A" if there are no design exceptions or crossing closures in those fields. See Section 602.9 for additional information.
5. Label components of the curb ramp with approved design exception values in enlarged and bold text with the prefix of "DE". Refer to Section 602.9. The text descriptor "DE" ensures pdf screen readers identify the element for accessibility with voice over.
6. Concurrence initials are required on the final curb ramp detail from the structural designer when the curb ramp is integrated with a bridge, moment slab, retaining wall, or bridge railing. Refer to Section 602.11.
7. Concurrence initials are required on the final curb ramp detail from the signal designer when the curb ramp includes a signal or pedestrian push button or crossing closure. Refer to Section 602.11.
8. Provide a construction control alignment on the curb ramp detail, which is identified by "CR##" and normally at the gutter flow line for modeled terrains/surfaces. Number each corner control line sequentially throughout the project limits. Generally, one control alignment is assigned per corner, island, or median island. Islands may have a control alignment "CR##" that is relative to or on the street. Refer to Section 602.10.
9. Flag construction control alignment points along the alignment. Identify match points and radius points on the control line. Data tables can be used to list station, offset, and elevation information for clarity. Profile alignments are optional. Additional curb ramp detail information may be required on a second detail sheet for clarity of content. Refer to Section 602.17.
10. Curb ramp line styles, line weights, and patterns shall be shown utilizing ODOT's pen table for curb ramps details (plans_CurbRampDetail.tbl).

11. Curb ramp design slopes and dimensions are shown on the plan view of the curb ramp detail sheet layout. Label constrained clear widths within the pedestrian access route. Label transition panels when included. Label right of way boundaries, easements, and property lines that constrain curb ramp and sidewalk construction or contractor's operations. Identify easements as permanent or temporary. Refer to Section 602.17.
12. A scale of 1"=5' and showing one corner per sheet is preferred. When a corner will not fit on a single sheet at 1"=5', or two corners are being shown on a single sheet, a scale of 1"=10' is permissible. Include the scale of the curb ramp detail on the curb ramp detail sheet, which is particularly important if a control alignment is not provide for scale. Draft curb ramp details with the same orientation as the general construction layout. The detail sheet is an enlargement of the general construction. Refer to Part 602.2.
13. When linear breakout sheets are not used (i.e. 1"=50' or 1"=100' General Construction sheets), provide site sheet(s) at 1"=20' with one intersection per sheet. The 1"=20' aligns with signal plan construction intersection drawing standards.
14. Existing and proposed utilities, signs and signal poles features are shown to scale utilizing ODOT's curb ramp detail menu symbols. Include proposed signal poles, pedestrian poles, push buttons and closure sign supports. Use ODOT's pen table for curb ramps details when printing. Refer to Section 602.13.
15. Pattern level ($\leq 2\%$ slope) surface areas and additional areas required to provide access to pedestrian pushbuttons. Refer to Section 602.13. Use the wheelchair design vehicle cell to verify access to the pedestrian pushbutton(s), as shown in the Signal Design Manual. It should be displayed in the design file, but not printed.
16. Include site-specific curb detailing. Some generic curb ramp details are available on Standard Detail DET1752.

602.2 ODOT Roadway Ribbon Workflow for Curb Ramp Details

When creating curb ramp detail sheets, use the standard design and drafting tools for a consistent presentation of the curb ramp design. The Curb Ramp Details ribbon tab and Curb Ramp Sheet Setup ribbon tab in the ODOT Roadway Ribbon Workflow contains many of the tools needed to create curb ramp detail sheets (see Figure 600-9). Whenever applicable, style, font, justification, size and location of text and cells are preset in the ODOT MicroStation workspace, so it is important to use the tools on the ribbon to maintain consistency across all curb ramp detail plan sheets.

Figure 600-9: ODOT Roadway Ribbon Workflow



602.3 Curb Ramp Details Sheet Sequence

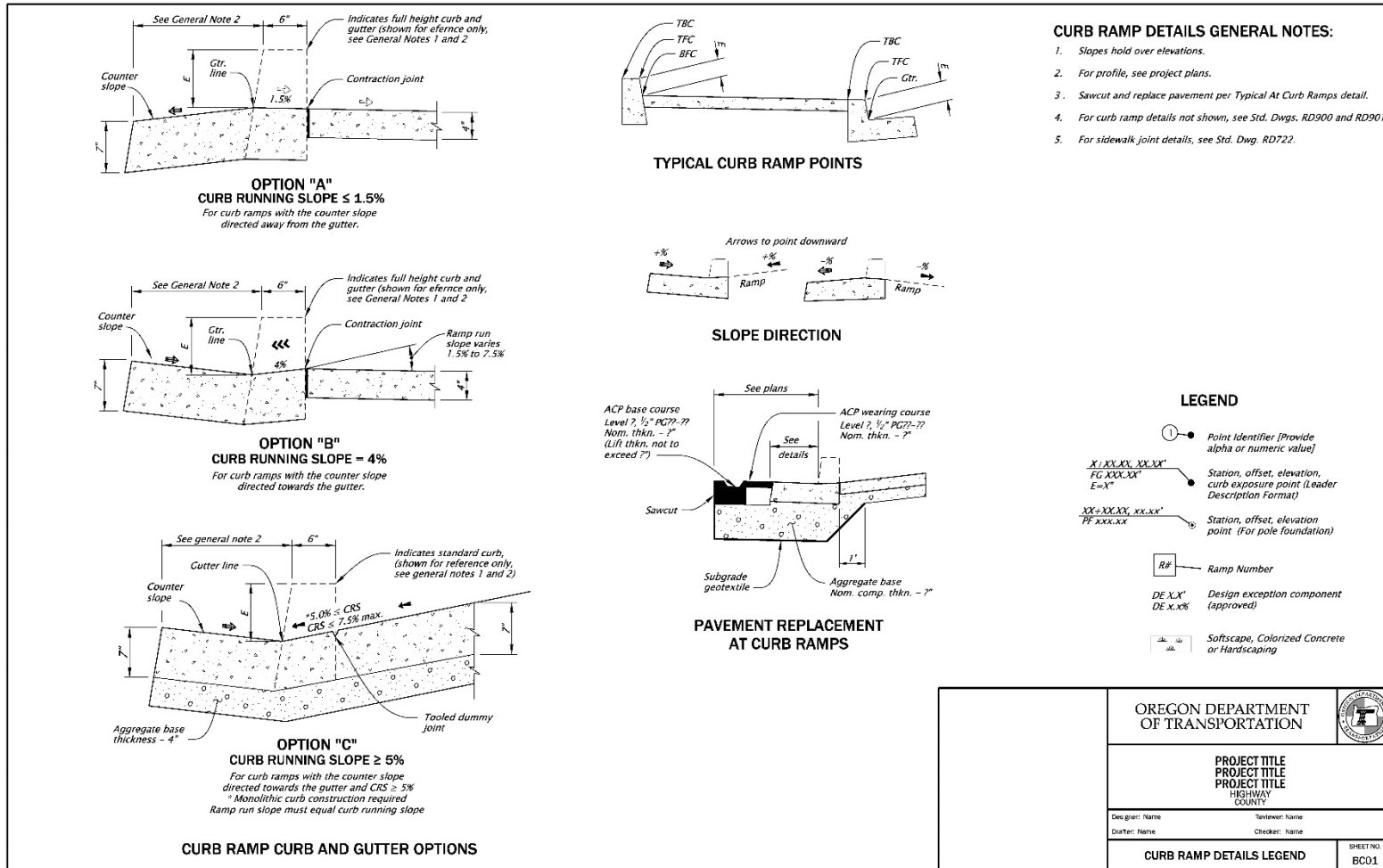
Organization of the curb ramp details sheets in the plan set can improve readability for all. Depending on the nature of the project, curb ramps should be grouped by county or city in order of increasing milepoints so a reader can easily find a particular location. A curb ramp sheet index may help organize the contract plans and aid readers in finding information quickly.

If the same design details will be repeated on multiple curb ramp detail plan sheets, the plan set may include a general details curb ramp details sheet. When used, the general curb ramp detail sheet(s) should be the first in the Curb Ramp Details series. See Figure 600-10 for an example of a general curb ramp details sheet, which is used to display project information that applies to multiple curb ramp detail sheets, and eliminates the need to repeat information on each individual sheet. Applicable plan, elevation, and section information from Standard Details DET1752, DET1753, DET1771 or others developed for curb ramp construction may be drafted on one or more sheets as required.

The second Curb Ramp Detail sheet in the sequence may be a curb ramp sheet index, or curb ramp plan sheet layout. Depending on the complexity and size of the project, multiple index or layout sheets may be required. The curb ramp index sheet(s) should encompass the complete project limits for clarity. See Figure 600-11 for an example of a curb ramp sheet index and Figure 600-12 and Figure 600-13 for examples of curb ramp plan sheet layouts.

Curb Ramp Detail sheets for specific curb ramps follow the general curb ramp details and sheet index or plan sheet layouts.

Figure 600-10: Example Curb Ramp Details



OREGON DEPARTMENT OF TRANSPORTATION		
PROJECT TITLE PROJECT TITLE PROJECT TITLE HIGHWAY COUNTY		
Designer: Name	Title/rev: name	
Drafter: Name	Checker: name	
CURB RAMP DETAILS LEGEND		SHEET NO. BC01

FINAL EITRONIC DOCUMENT
AVAILABLE UPON REQUEST

Figure 600-11: Example Curb Ramp Sheet Index

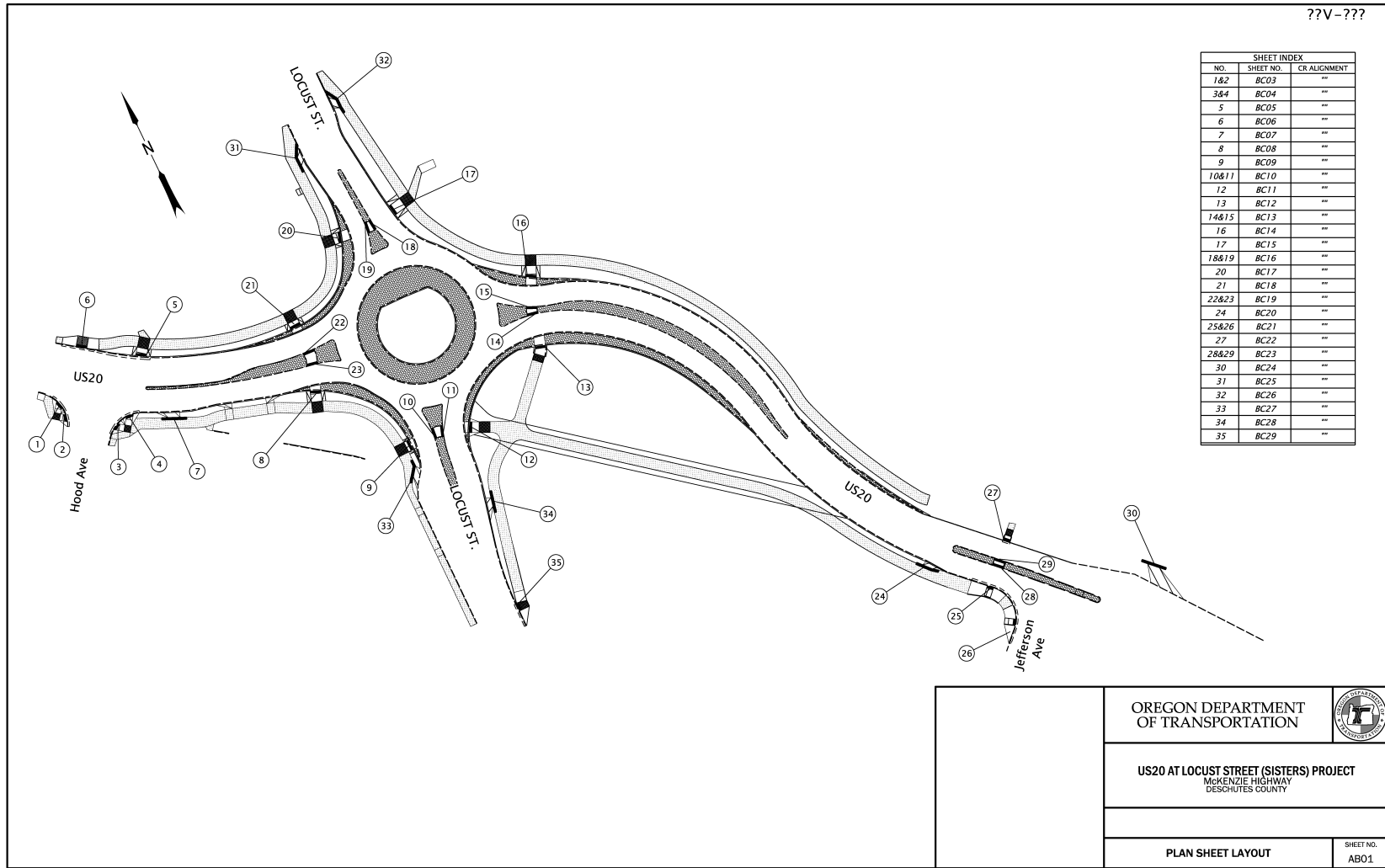


Figure 600-12: Example Curb Ramp Plan Sheet Layout – Control Lines

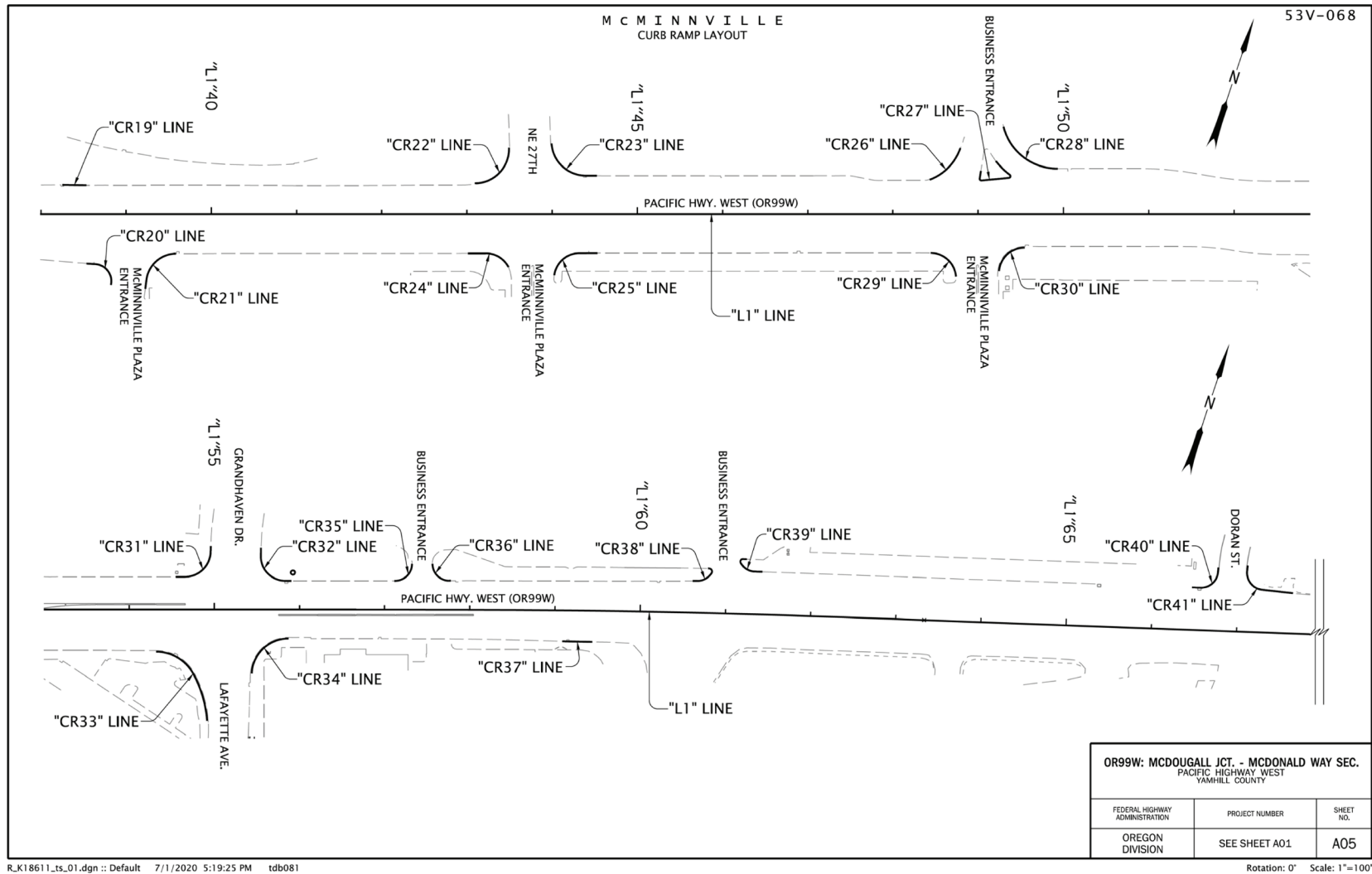
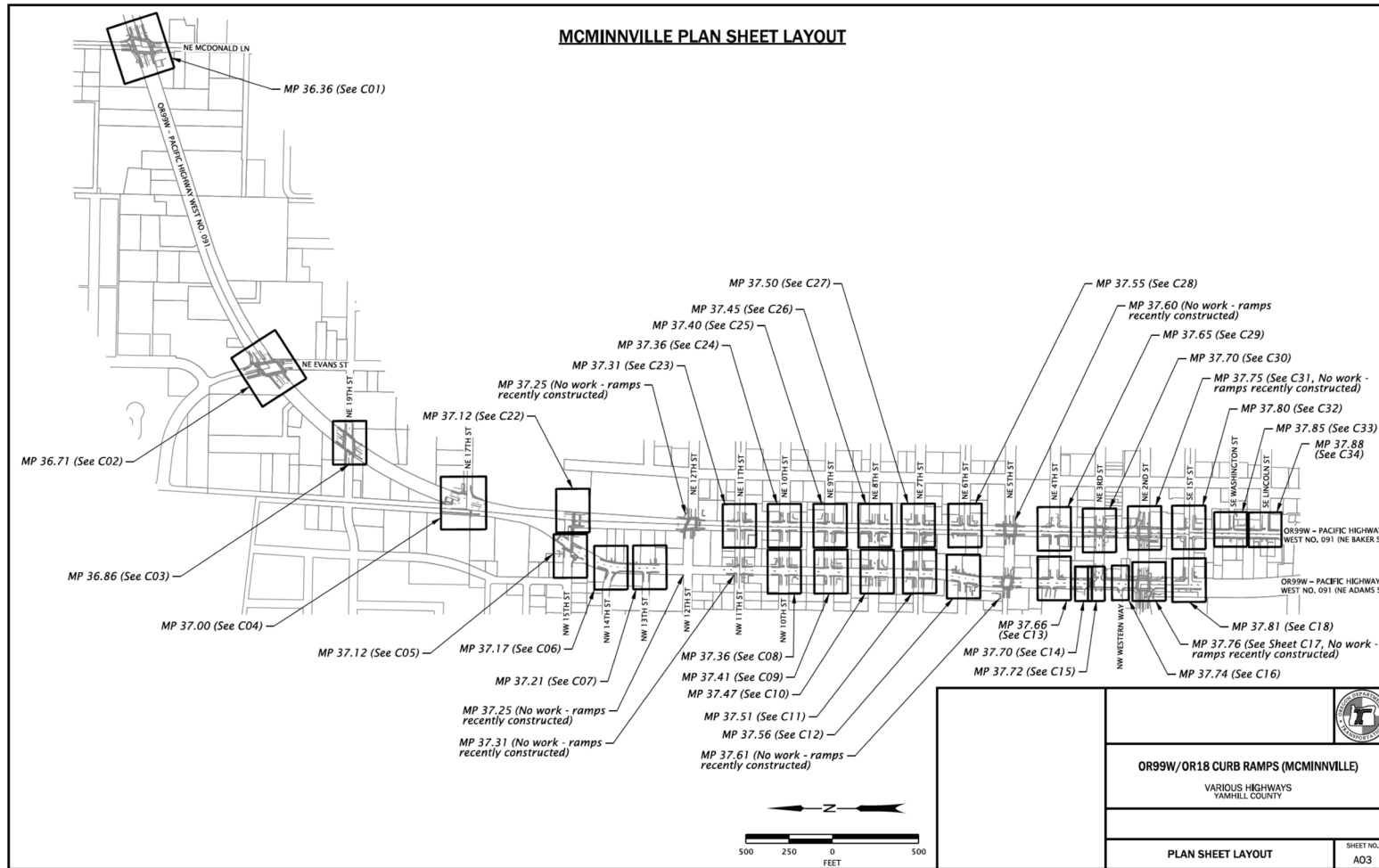


Figure 600-13: Example Curb Ramp Plan Sheet Layout – Milepoint



602.4 Curb Ramp Detail Orientation

Orientation of the curb ramp detail needs to be the same as the orientation of the General Construction sheet layout. This allows for easier interpretation between the two views. Detail do not need to be oriented with north being the top of the page unless that is the true orientation. Place a north arrow appropriately oriented to show the general direction of North.

602.5 Scale and Sheet Layout

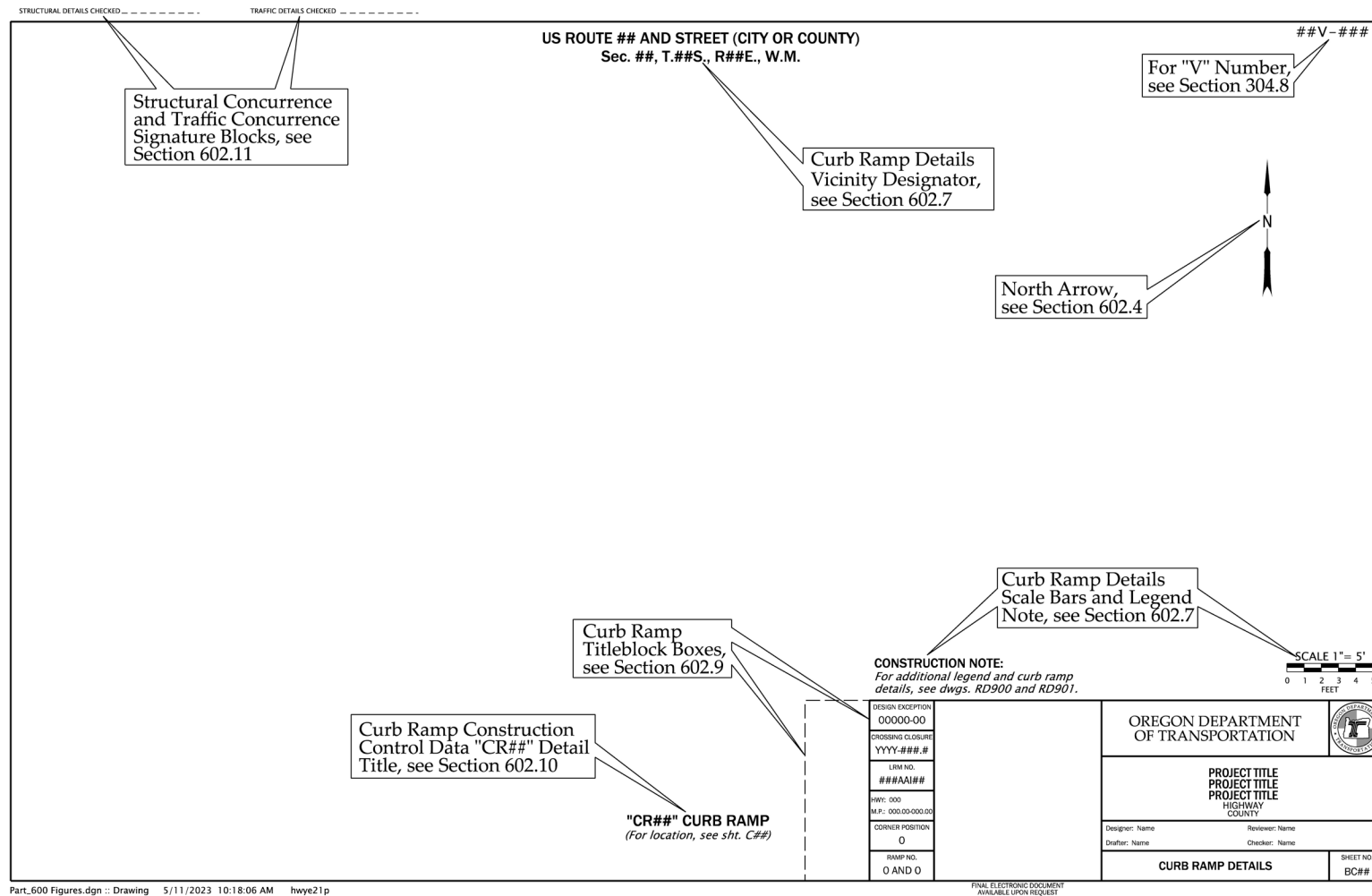
Generally, only one intersection corner will fit on a single plan sheet because of the enlargement required to show all of the planned work. The most commonly used scale factors are 1"=5' or 1"=10' but other scales are sometimes used when 1"=5' is too large and 1"=10' is too small. Showing one corner per sheet at a 1"=5' scale is preferred. It is permissible to scale the sheet at 1"=10' to show two corners of the same intersection, however it is important to use a consistent plan sheet scale throughout the curb ramp details. See Section 602.7 for placement of graphic scale bars.

602.6 Typical Detail Sheet

Figure 602-5 provides an overview of the typical annotation elements of a given curb ramp detail sheet. The various elements will be defined in more detail in the following sections.

Curb ramp line styles, line weights, and patterns shall be shown utilizing ODOT's CAD standards and ODOT's pen table for curb ramps (plans_CurbRampDetail.tbl) that are available through the ODOT workspace.

Figure 600-14: Curb Ramp Details Sheet Placeholders



602.7 Scale Bars and Construction Note

Place the appropriate curb ramp scale bar cell (*1"=5' Scale* or the *1"=10' Scale*) in the curb ramp detail sheet. The default location of the scale bar(s) is determined by placing the cell at the "0,0" origin point (lower left corner of the plan sheet border). The scale bar may be moved to accommodate the contents of the plan sheet. Figure 600-14 shows the *1"=5' Scale* graphic scale bar in the appropriate location. Both the *1"=5' Scale* cell (ScaleBar_5) and the *1"=10' Scale* cell (ScaleBar_10) are available from the ODOT Roadway Ribbon workflow, Curb Ramp Sheet Setup Ribbon Tab, or by accessing them through the Place Active Cell command in the Road.cel cell library.

The *Construction Note* cell (ConstNote) located to the left of the scale bar, replaces the need to have a redundant list of construction notes on each of the curb ramp details sheets by referring the user to Standard Drawings RD900 and RD901. When a general curb ramp detail sheet is included in the plan set, the text of the *Construction Note* cell can be edited to also reference that plan sheet.

Placement of the *Construction Note* cell (ConstNote) is based on the "0,0" origin point (lower left corner of the sheet border). The *Construction Note* cell is located in the ODOT Roadway Ribbon Workflow, Curb Ramp Sheet Setup Ribbon Tab. See Figure 600-9.

In some instances, there may be a need to show a legend for symbols or patterns used on a single curb ramp detail sheet. In this case, place the legend on the curb ramp detail sheet that shows the symbols.

602.8 Aerial Photos and Gray Shading

Color, or black and white aerial mapping (grey shaded) for topography background is not permitted. This muddies up ODOT established drafting patterns and symbology. Aerial photos are at a distorted angle rather than perpendicular, distances are not accurate, and the photos are not orthographically rectified.

602.9 Curb Ramp Title Block Boxes

On curb ramp detail sheets, there are six boxes to the left of the title block. These boxes contain information that is useful to the designer, the contract administrator, the contractor, and others within the department. See Figure 600-15: Title Block Curb Ramp Boxes.

All data fields in the curb ramp title block boxes must be filled in. If there are no design exceptions or crossing closures, place "N/A" in those boxes. Label components of the curb ramp with approved design exception values with the prefix of "DE".

DESIGN EXCEPTION - The design exception number format must match the number assigned to the approved design exception.

CROSSING CLOSURE - If applicable, the Crossing Closure number will be provided by the designer. If the closure is approved by a local agency, use the word "LOCAL".

LRM NO. - For additional information about the LRM number, refer to Section 602.16.1. Use N/A for local system.

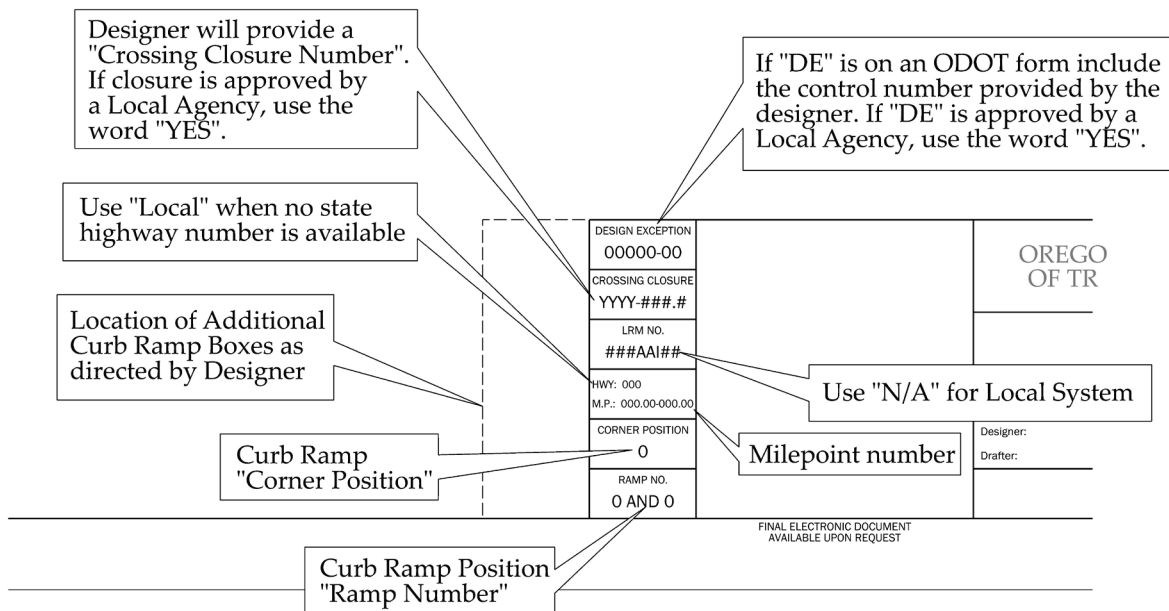
HWY / M.P. - Highway number example routes would be "OR99E" or "I-5". Use "LOCAL" when no state highway number is available. The designation for a milepoint number should be only one point, not a range (i.e., 000.00 not 000.00-000.00).

CORNER POSITION - Curb ramp corner position is either # or #A.

RAMP NO. - Ramp number format possibilities are: "1", "1 & 2", or "1, 2 & 3".

Occasionally, when circumstances require multiple corners to be shown on the detail sheet or if multiple Design Exceptions need to be referenced, a plan sheet may need to list two sets of boxes. Use the *Title Block Boxes* cell (CR_TitleBlk_Box2) on the Curb Ramp Sheet Setup ribbon tab to place the second set of boxes. Insert the cell at the lower left corner of the plan sheet border (0,0) to locate the second set of boxes to the left of the first set.

Figure 600-15: Title Block Curb Ramp Boxes



602.10 Construction Control Data

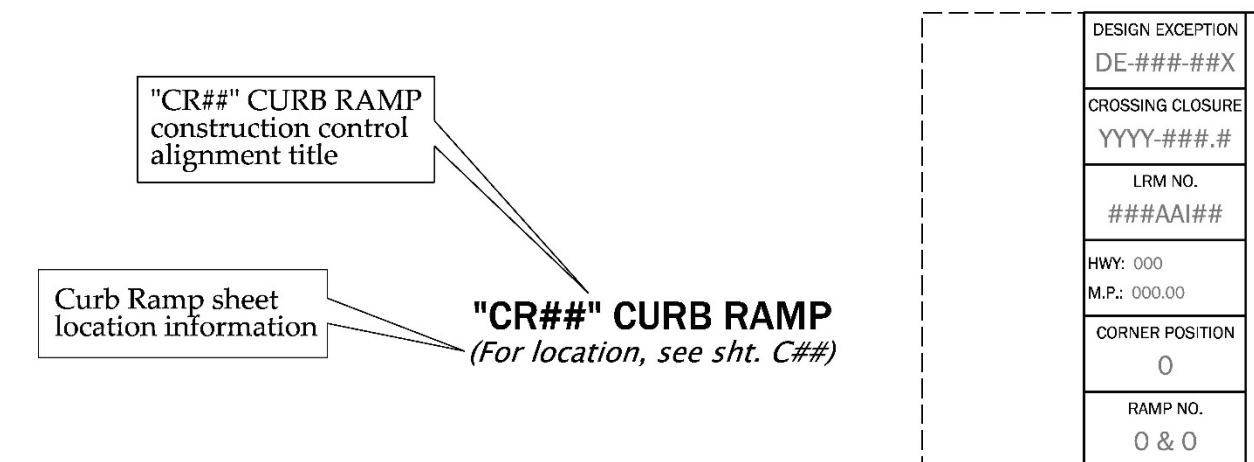
Provide a construction control alignment on the curb ramp detail, using the “CR##” alignment. Construction control lines are normally located at the gutter flow line, and each line is numbered consecutively throughout the project limits. Generally, one control alignment is assigned per corner, island, or median island. Islands may have a control alignment “CR##” that is relative to or on the street.

Construction control alignment points are identified along the alignment. The match points and radius points are identified on the control line. Data tables can be used to list station, offset, and elevation information for clarity. Profile alignments are optional. Additional curb ramp detail information may be required on a second detail sheet for clarity of content. Data tables can be used in combination with point leaders to help with readability.

The construction control alignment title cell is found under the ODOT Roadway Ribbon Workflow, Curb Ramp Details Ribbon Tab (see Figure 600-9). To place the cells in the correct location, select the lower left corner of the plan sheet border (0,0) as the insertion point (see Figure 600-14). See Figure 600-16 below for additional information on the “CR##” CURB RAMP title.

For consistency, the “CR##” CURB RAMP title should be placed as shown in Figure 600-16. However, if the curb ramp detail being shown on the sheet does not allow for placement in the location shown, keep the title as close to the designated location as possible. If curb ramp locations are shown on a separate curb ramp sheet index or layout plan, replace “C##” with the correct sheet number. Delete “(For location, see sht. C##)” if the a curb ramp sheet index or layout plan are not included.

Figure 600-16: “CR##” CURB RAMP Title



602.11 Curb Ramp Concurrency Signature Blocks

For complex curb ramp designs, concurrence initials are required from other disciplines to ensure quality control of contract plans and remove high risk failures during design. This includes curb ramps at structures and signalized intersections. These are high risk locations and additional coordination is required during project development and design.

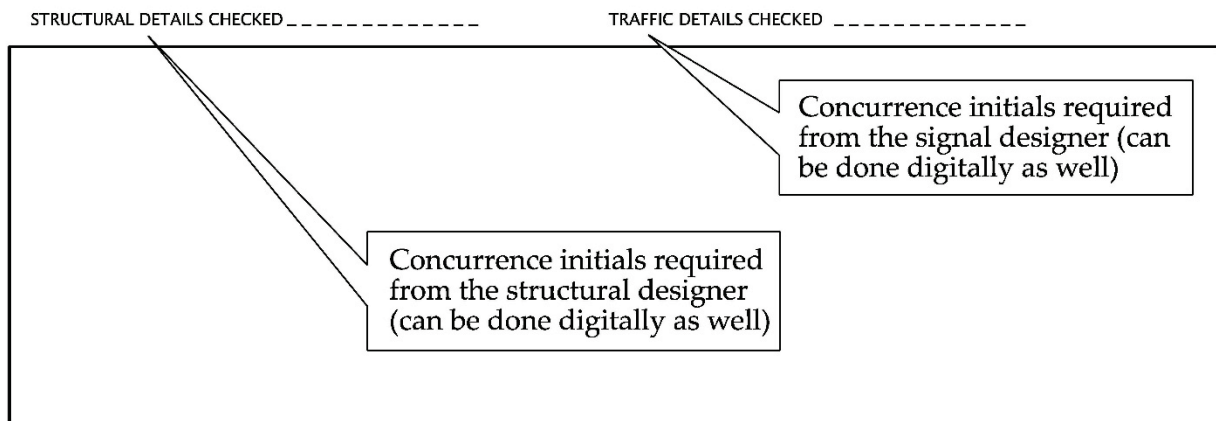
Concurrence initials are required from the structural designer on the final curb ramp detail when the curb ramp is integrated with a bridge, moment slab, retaining wall or bridge railing.

Concurrence initials are required from the signal designer on the final curb ramp detail when the curb ramp includes a signal or pedestrian push button or crossing closure.

In both cases digital signatures are used to sign. Signature fields are located in the upper left border of the curb ramp detail sheet (see Figure 600-17).

The *Structural Checker* and *Traffic Checker* cells (CR_SDC and CR_TDC) for concurrence signatures are available from the ODOT Roadway Ribbon Workflow, Curb Ramp Sheet Setup Ribbon Tab (see Figure 600-9). To place the cells in the correct location, select the lower left corner of the plan sheet border (0,0) as the point of insertion for each cell.

Figure 600-17: Concurrence Signature Blocks



602.12 Curb Ramp Vicinity Designator

Organization of the curb ramp details sheets in the plan set can improve readability for all. Depending on the nature of the project, curb ramps should be grouped by County or City in order of increasing milepoints. The Curb Ramp Vicinity Designator is a title at the top of curb ramp detail sheets that identifies the location of the curb ramp by listing highway, streets, city or county and corner number.

Use the following format for the Curb Ramp Vicinity Designator:

"HWY (AKA STREET) @ STREET/ACCESS (CITY/COUNTY) - CORNER"

For example:

"US101 (7th ST.) @ TOHLS AVE. (NEHALEM) - SW CORNER"

HWY - Route (if no route, use the highway name)

AKA STREET - Name of the street that the highway follows

STREET/ACCESS - Name of street that intersects highway.

If intersecting roadway is a highway ramp then route # & direction; for example: "@ I-84 EB ON-RAMP"

CITY/COUNTY – If the curb ramp is located within city limits, list the city name. Otherwise, list the county name.

CORNER - Directional position about intersection; for example: "S CORNER", "SW CORNER", "W CORNER", etc.

If project is made of project sites then add **SITE #** to the beginning; for example:

"SITE 23 - US101..."

Figure 600-14 shows the location of the line of text designating the Curb Ramp Vicinity Title. The Curb Ramp Vicinity Designator cell can be found under the ODOT Roadway Ribbon Workflow, Curb Ramp Details Ribbon Tab (see Figure 600-9). To place the cells in the correct location, select the lower left corner of the plan sheet border (0,0) as the insertion point.

602.13 Curb Ramp Symbols

Oregon Standard Drawings RD900 and RD901 provide a good overview of the components and accessories found on a curb ramp details sheet. Figure 600-18 shows the typical components and Figure 600-19 shows the typical accessories.

Including these two standard drawings by reference in the "Construction Note" as referred to in Section 602.3 and Figure 600-14 standardizes the symbols used on the details statewide without having to create a unique legend for each project.

Existing and proposed utilities, signs and signal poles features are shown to scale utilizing ODOT's curb ramp detail menu symbols. Include proposed signal pole pedestrian pole, push buttons and closure sign supports. Use the *Utilities* tool on the Curb Ramp Details tab to place these features in the roadway design file or a separate file that is referenced into the container file. The ribbon tool will place features on an level designated for existing features. If showing proposed features, be sure to change the level to a proposed level. Use ODOT's pen table (plans_CurbRampDetail.tbl) for printing curb ramps details sheets.

Figure 600-18: Curb Ramp Components Legend on RD900

LEGEND:











	Marked or intended crossing location		Running slope 7.5% max. (Max. 8.3% finished surface slope)
	Sidewalk or other traversable surface		Counter slope 4.0% max. ascending or descending (Max. 5.0% finished surface slope) Slope as required for drainage
	Detectable warning surface (DWS)		Flare slope (Max. 10.0% finished surface slope)
	Level area (Turning space/landing)		4'x4' clear space
	Cross slope 1.5% max. (Max. 2.0% finished surface slope) (Normal sidewalk cross slope)	RR1	Ramp Run Position 1
	Running slope 4.0% max. (Max. 4.9% finished surface slope)		

Figure 600-19: Curb Ramp Accessories Legend on RD901

















STANDARD ABBREVIATION FOR CURB RAMP DETAILS

- FG = Finish Grade (Elevation ft.) i.e. FG XXX.XX'
- TFC = Top Face of Curb (Elevation ft.)
- TBC = Top Back of Curb (Elevation ft.)
- BFC = Bottom Face of Curb (Elevation ft.)
- gtr. = Gutter (Elevation ft.)
- GS = Gutter Slope (%), i.e. X.X%
- E = Curb Exposure (Inch), i.e. X"
- CS = Counter Slope on gutter pan (%)
- RRN = Ramp Run Number, i.e. RRX
- cl.sp. = Clear Space
- TS = Turning Space
- XS = Cross Slope
- LA = Level Area
- DWS = Detectable Warning Surface
- PAR = Pedestrian Access Route

INTERSECTION CONDITION TYPES

- MB = Midblock
- SU = Signalized or Uncontrolled
- SY = Stop or Yield

LEGEND:

	Fire Hydrant		Sign on a Post
	Gas Valves Box		Traffic Signal Junction Box
	Inlet		Utility Pole
	Sanitary Manhole		Utility Vault
	Storm Manhole		Water Meter
	Pole Anchor		Water Valve
	Pole Base		Cross Walk Barricade
	Pedestrian Pedestal		
	Pedestrian Pushbutton		

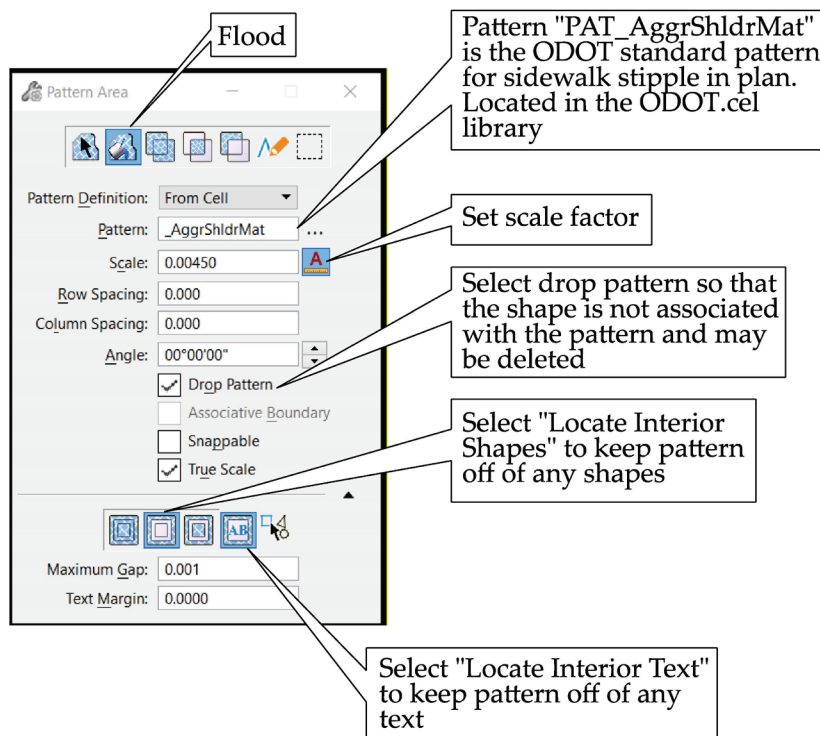
602.14 Curb Ramp Patterns

Curb ramp line styles, line weights and patterns shall be shown utilizing ODOT's pen table (plans_CurbRampDetail.tbl) for curb ramps details. Line styles and patterns are available in the ODOT workspace. Curb ramp patterns are currently being developed and will be added to the Curb Ramp Details tab on the ODOT Roadway Workflow when development is complete.

When using pattern or hatching, make sure to “Locate Interior Shapes” and “Locate Interior Text” within the flood area using the pattern dialog box (see Figure 600-20). This technique prevents patterning and hatching from obscuring text or legend items. The drop pattern command is located in the Drawing Ribbon Workflow, under the Annotate Ribbon Tab, under the Patterns Ribbon Group, then clicking on the pattern area Ribbon Button. Refer to Figure 600-21 for an example of drop pattern command on a patterned curb ramp.

An alternative method to preventing the patterning and hatching areas from obscuring text or legend items would be to set the patterning transparency value to 70. This allows the patterning to show completely and uninterrupted in the patterned area without masking. This also allows for the text and legend items to be clearly visible.

Figure 600-20: Pattern Dialog Box

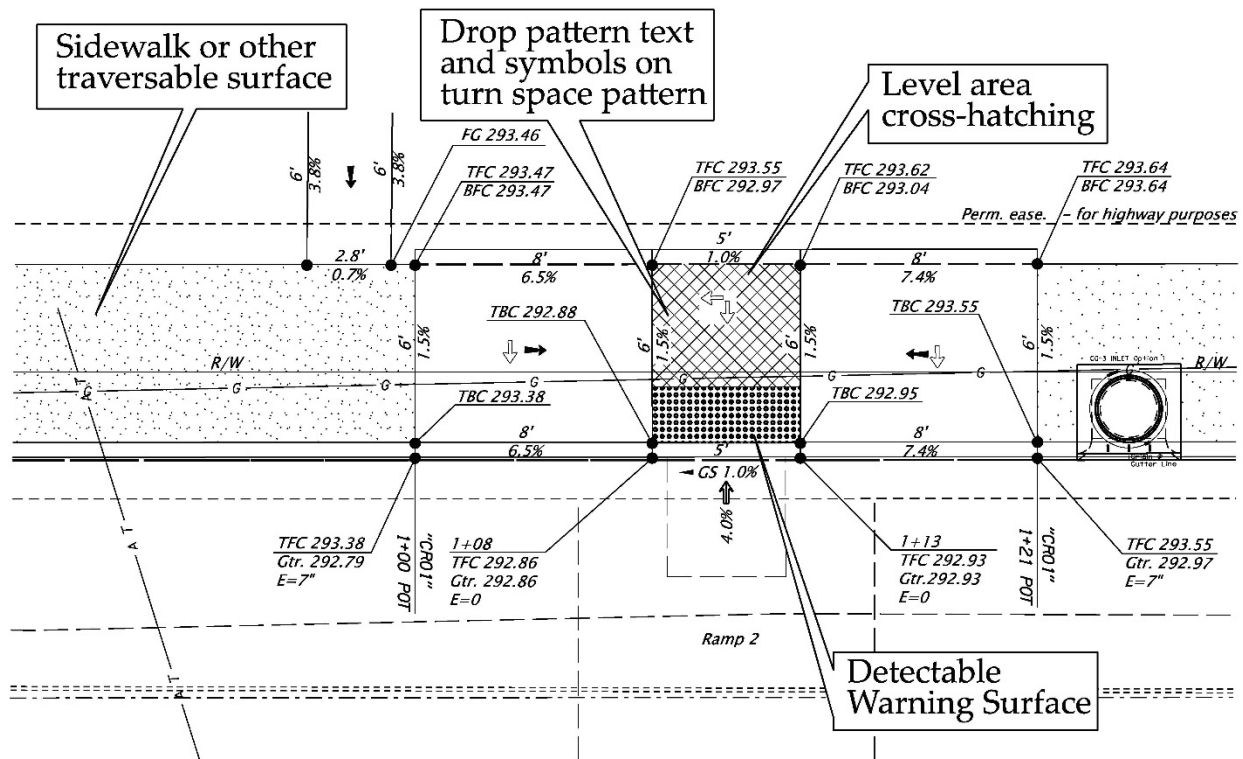


Additional level surface area may be required to provide access to pedestrian pushbutton(s), a doorway, and/or business walkways connections that will form an irregular shaped area. Use the wheelchair design vehicle cell to verify access to the pedestrian pushbutton(s) as shown in the [Signal Design Manual](#). Place the wheelchair design vehicle cell on a hidden level that will not print.

Refer to Figure 600-21 for examples of typical curb ramp detail patterns. When patterning the area for Detectable Warning Surfaces (DWS), fill the complete area with the pattern such that no suggestion of cut lines on the DWS panel is illustrated. Contractors may use a variety of panels and trim them in different ways to meet the installation requirements and spacing of truncated

domes. The pattern is representative but not an exact match of field construction. Illustrate the shape so that it meets the minimum dimensions of two feet in the direction of pedestrian travel. Do not simply copy lines parallel particularly on arc lines.

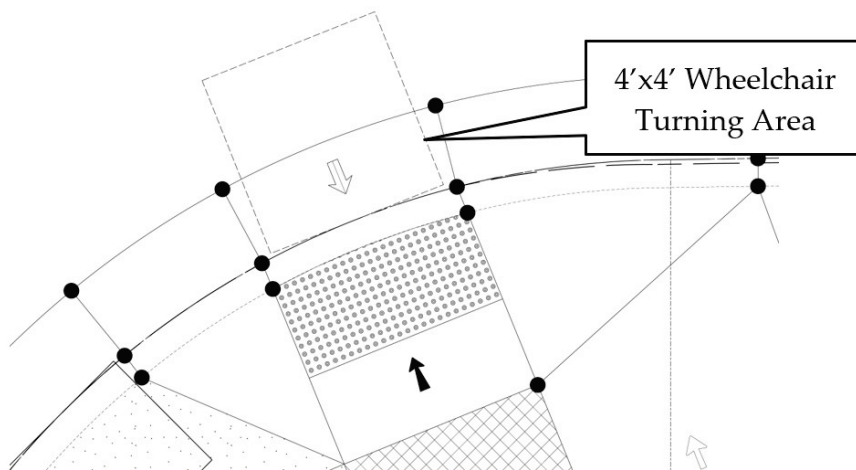
Figure 600-21: Typical Curb Ramp Pattern and Hatch Examples



602.15 Clear Space

When a curb ramp landing area is not parallel with the crossing, show a 4'x4' clear space turning area when the crosswalk will be marked. The turning area is required to be outside of the vehicular travel lanes and within the marked crosswalk. See Figure 600-22 for an example of the turning area within the crosswalk area but outside of the travel lane.

Figure 600-22: Clear Space Turning Area



602.16 Curb Ramp Unique Identifier

Each curb ramp is given a unique identifier based on ODOT's Linear Referencing Method (LRM), milepoint, a corner number, and ramp position. ODOT's inventory displays the unique identifier which can be found on ODOT's Roadside Layer>ADA ramps with the information icon. For new intersections or reconfigured intersections with curb ramps, refer to [ODOT's Exhibit A](#) for determining the corner number and ramp position. When more than one curb ramp is shown, label the curb ramps number.

All data fields in the curb ramp title block must be filled in. Indicate "N/A" if there are no design exceptions or crossing closures.

602.16.1 Location by Linear Reference Method (LRM)

The Linear Reference Method (LRM) number locates every curb ramp location on the state highway system. Find the LRM number on the [TransGIS](#) or [FACS-STIP](#) tool site by first selecting the "ADA Ramps" and "ADA Corners" layers then selecting "Apply". See Figure 600-23 for instructions in FACS-STIP tool. Next, select the identify tool, shown in Figure 600-24, and click on a curb ramp symbol to bring up the curb ramp information, which includes the LRM number, see Figure 600-25. Contact the Statewide Asset Specialist if the ADA ramp or corner information in TransGIS or the FACS-STIP tool appears contain an error.

Figure 600-23: FACS-STIP Tool ADA Ramp Layer

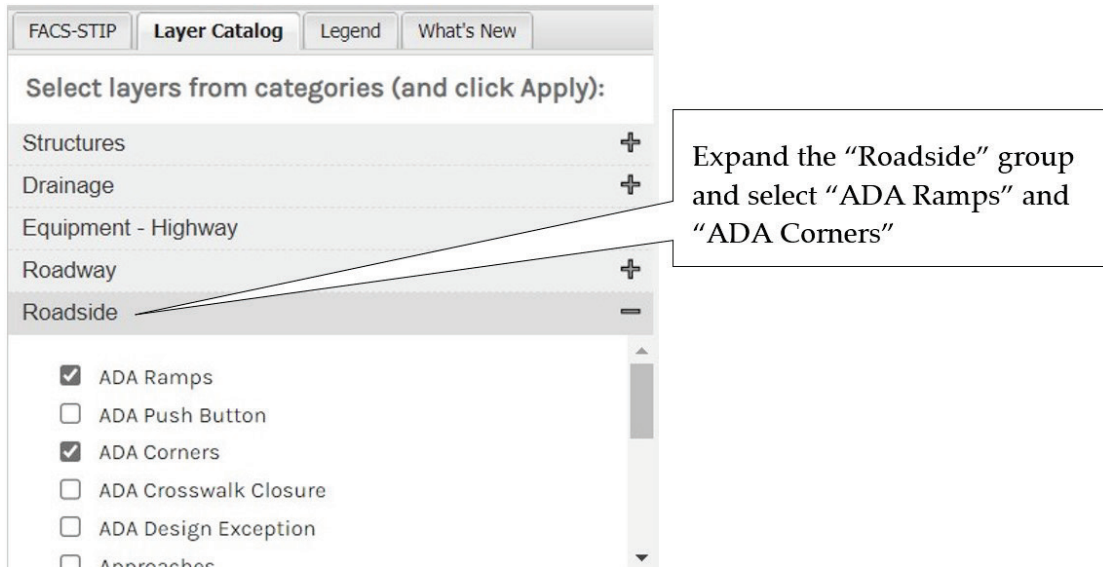


Figure 600-24: TransGIS Information Tool

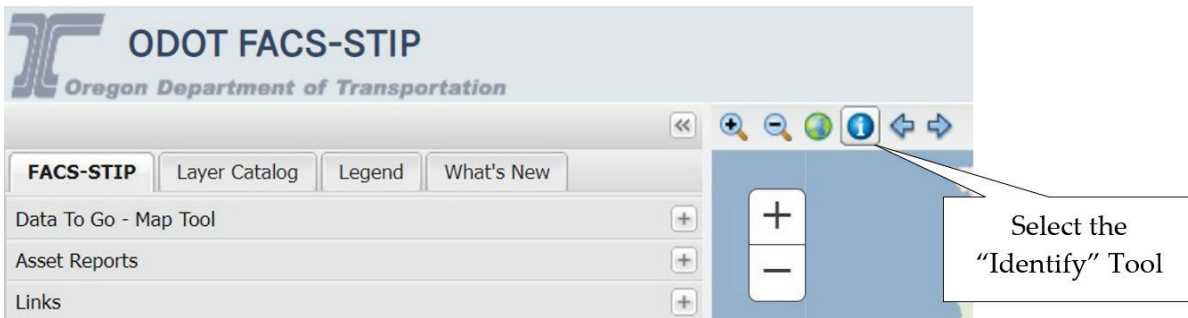
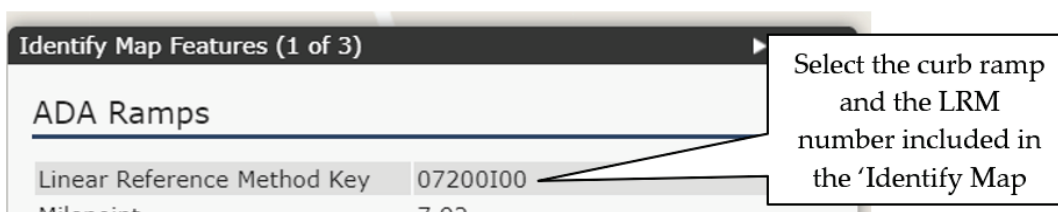


Figure 600-25: LRM Number



Include LRM numbers on the detail plan sheet to locate the intersection of the curb ramp.

The corners of the intersection and the individual ramp runs are also numbered, see Figure 600-26, Figure 600-28, and Figure 600-29 for examples of how corners and ramps are numbered.

Figure 600-26: Linear Referencing Method (LRM) Number

Linear Referencing Method (LRM) Number
 Use ODOT TransGIS, turn on layers Roadside > ADA corners and ADA Ramps to see LRM and corner position number of curb ramps inventoried. Select "Identify Features" and click on Map Position to see Information.

This is a code to identify the intersection on a specific state highway. There is a four part format for the code: Highway Number; Highway Suffix; Roadway ID, Mileage Type:

- 1) The Highway Number is a 3 digit number (not the route number) assigned to all state highways by ODOT. Valid numbers are 001-493.
- 2) Highway Suffix is a letter format assigned to frontage roads and connections to identify the unique connection, for example AA or AB. Use the Identify Features tool on the ODOT Trans GIS Road Network layer > Hwy Network-Colored layer for visual reference. Select "Identify Features" and click on Map Position to see Information. If the intersection is not located on a connection use 00 for the code.
- 3) Roadway ID is a one letter code used to identify alignment. There are two possible letter codes; "I" for increasing milepoint direction and "D" for decreasing milepoint direction. For most highways, the "I" direction is south and east. Note I-5 does not follow this rule. Generally "I" will be used. When there is a separated highway there will be an "I" roadway and a "D" roadway. Check the Digital Video Log to be sure of the direction.
- 4) Mileage Type is used when there are multiple locations of the same mile point on a section of highway. Overlay lapping mileage is listed as "z" mileage.

Example

228	00	I	00
Hwy. No.	Suffix	ID	Type

602.16.2 Milepoint

Milepoint of an intersection is generally based on the milepoint of the center of the intersection, to the hundredth of a mile. See Figure 600-27. Curb Ramp Milepoints shown on the plan should match milepoint information shown in FACS-STIP Tool or TransGIS, if available. Some locations will have the MP located at the interchange gore point or other location like offset signalized intersections.

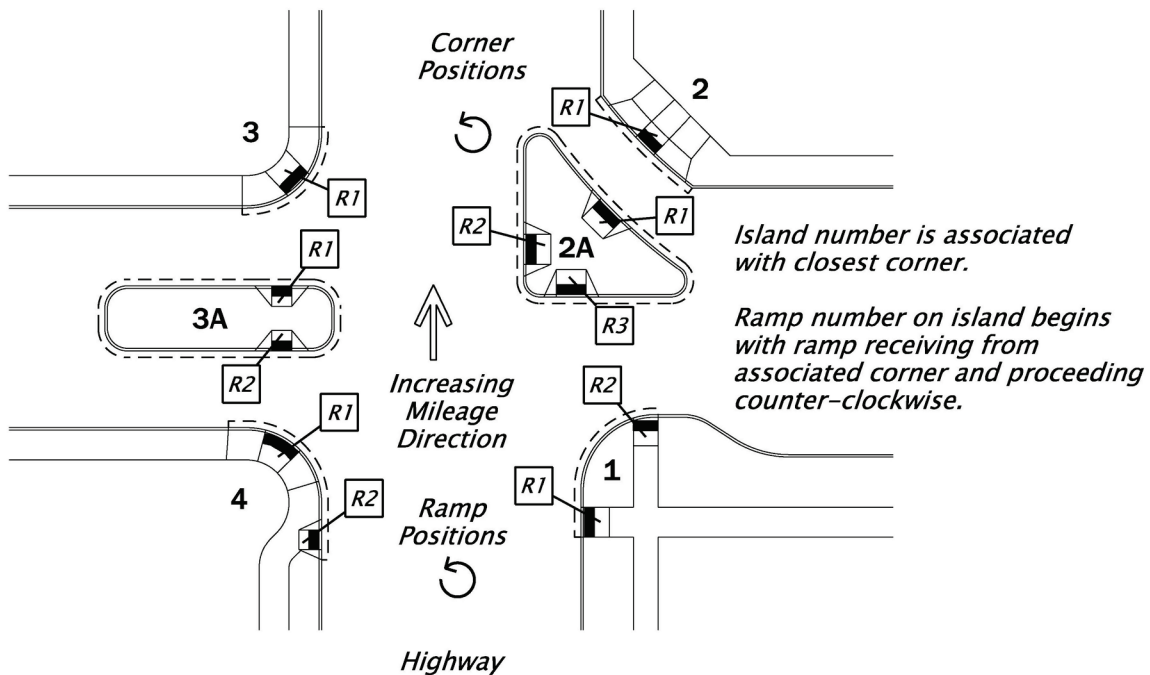
Figure 600-27: FACS-STIP Tool Milepoint

ADA Ramps	
Linear Reference Method Key	07200I00
Milepoint	7.02

602.16.3 Corner Position

Corner position is assigned using the following method. If travelling in the direction of increasing milepoints, “Corner 1” is the first corner on the right side of the roadway when entering the intersection. The remaining corners are numbered sequentially as you move counterclockwise around the intersection. For the example shown in Figure 600-28 below; the direction of increasing milepoint is from bottom to top, so the first corner encountered on the right side of the roadway is corner position 1. Moving counterclockwise around the intersection, corner positions 2 through 4 are identified. An “A” is added to the number for an island. For example: if an island is located between corner positions 1 and 2, but is closer to corner 2, the island is assigned a corner position number of 2A (see Figure 600-28).

Figure 600-28: Corner and Curb Ramp Position Diagram



For additional corner, ramp, and ramp-run numbering see Exhibit "A" at: https://www.oregon.gov/ODOT/Engineering/Documents_RoadwayEng/ADA_ExhibitA.pdf

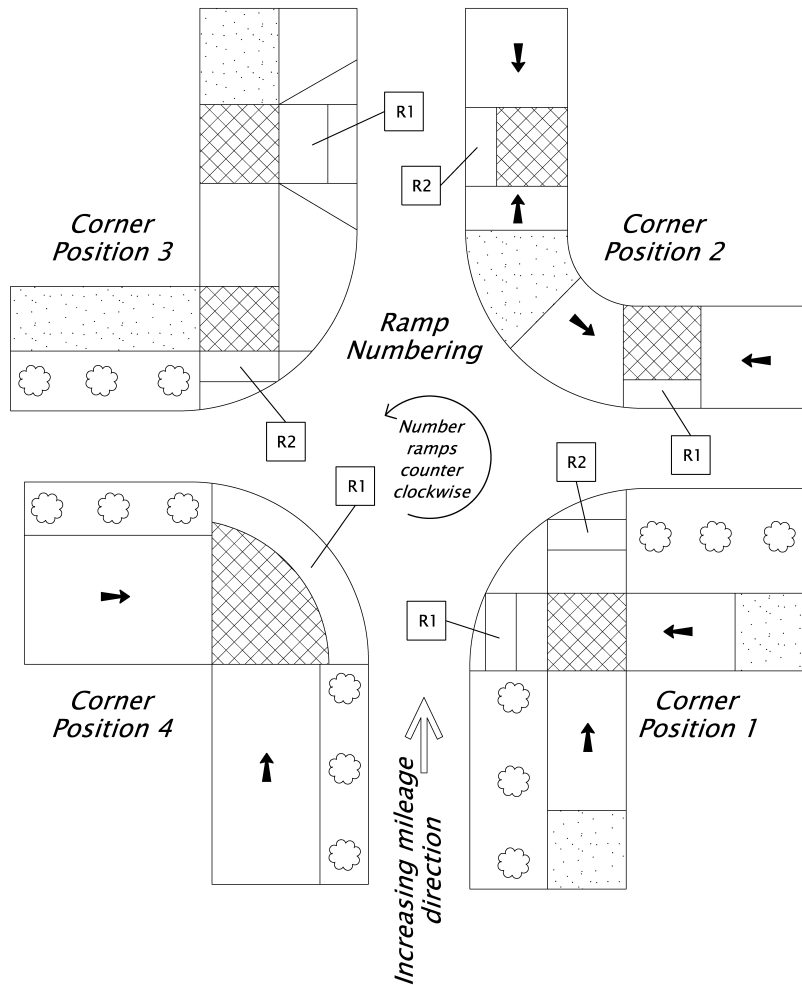
602.16.4 Curb Ramp Position

Curb Ramp Position is a number given to each curb ramp beginning with the Corner Position 1. The first curb ramp encountered in the increasing milepoint direction is number Ramp 1. Then

proceeds counterclockwise around the corner, numbering in consecutive order. Proceed following the pedestrian route and in Corner Position Number order (see Figure 600-29).

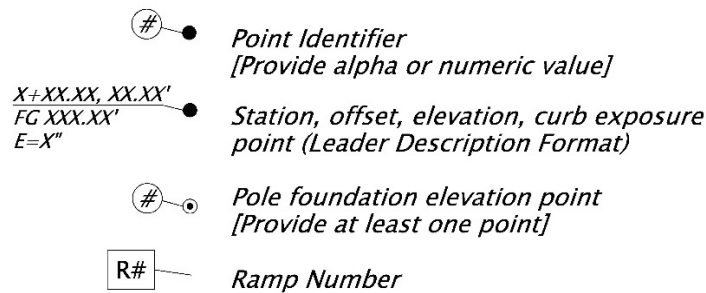
For curb ramps that are not on the ODOT system, label curb ramps as “Local Curb Ramp” instead of using the “R#” convention from the *Curb Ramp #* cell on the Curb Ramp Detail tab in on the ODOT Roadway workflow.

Figure 600-29: Ramp Numbering Diagram



[ODOT’s Exhibit A](#) shows other scenarios for corner and curb ramp numbering. Always use the milepoint, corner and ramp numbering shown in the ODOT inventory for each curb ramp. When a curb ramp is reconfigured, the designer will need to work with the curb ramp asset team for proper numbering of the intersection. Local jurisdictions may have their own corner numbering that is different than ODOT; frequently assigning positions based on true north rather than by direction of increasing milepoint.

Figure 600-31: Example of Curb Ramp Details Point Identifiers



602.17.1 Labeling Critical Points using Leader Descriptions

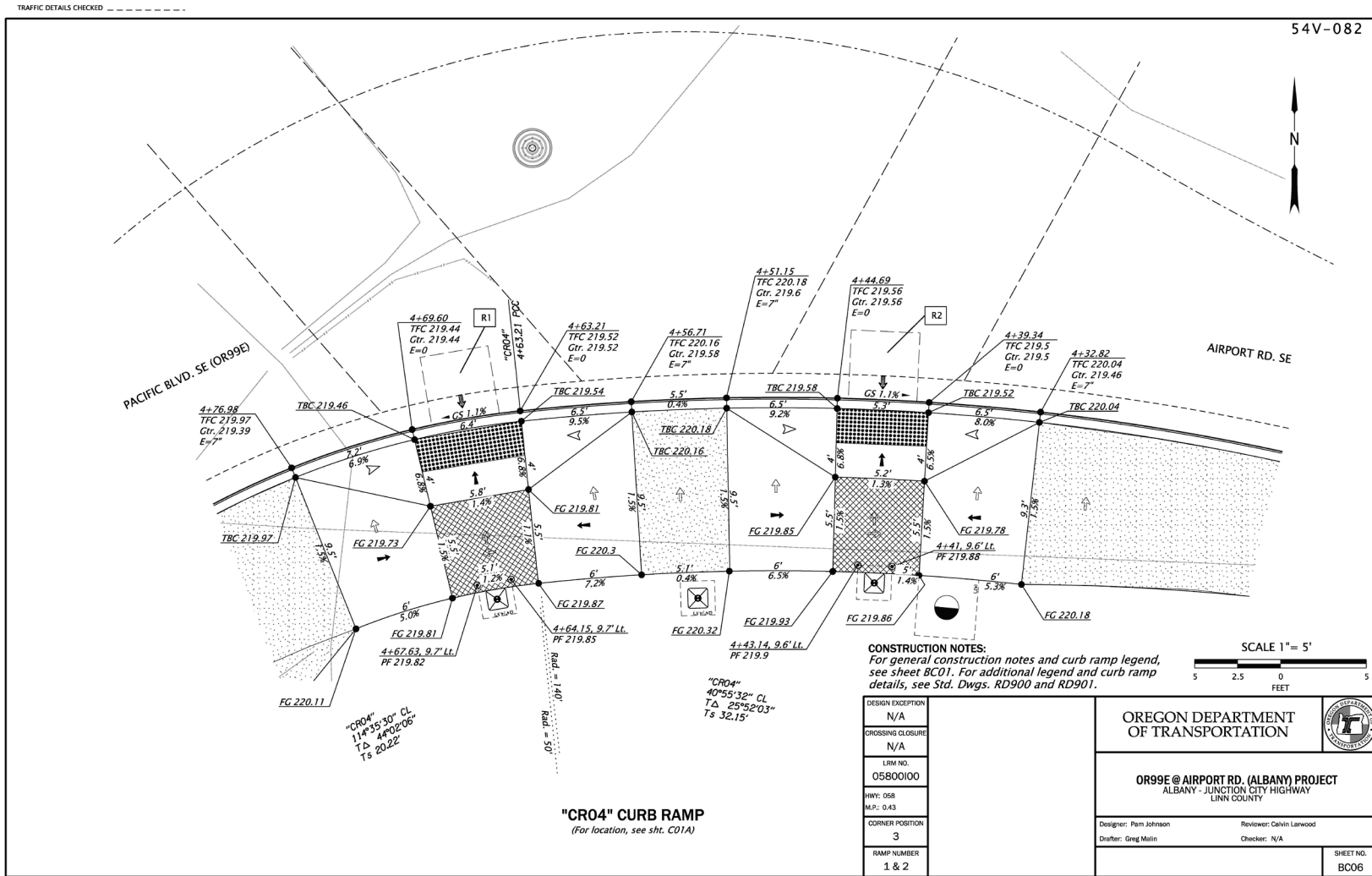
Ramp numbering is drafted using a leader with a boxed enclosure rather than a circular enclosure. This can be used on either the curb ramp details sheet or the general construction sheet if necessary for general note clarity.

All point identifier elements are available using the ODOT Roadway Ribbon Workflow, under the Layout (Designer Tools) Ribbon Tab, under the Legend Items Ribbon Group for either the “General Elevation PT” or the “Pole Foundation Elev. PT” Ribbon Buttons.

The bubble notes are found under the ODOT Roadway Ribbon Workflow, on the Notes Ribbon Tab, in Bubble Notes Ribbon Group (by activating the Bubble Note automated ribbon button tool). This allows for a variety of options regarding the Bubble Note placing tool (i.e. Note Number, Draw Leader Line, Margin Offset and Auto Increment).

The Ramp Number cell can be found under the ODOT Roadway Ribbon Workflow, Curb Ramp Details Ribbon Tab (see Figure 600-9).

Figure 600-32: Example of Curb Ramp Details Sheet Using Leaders



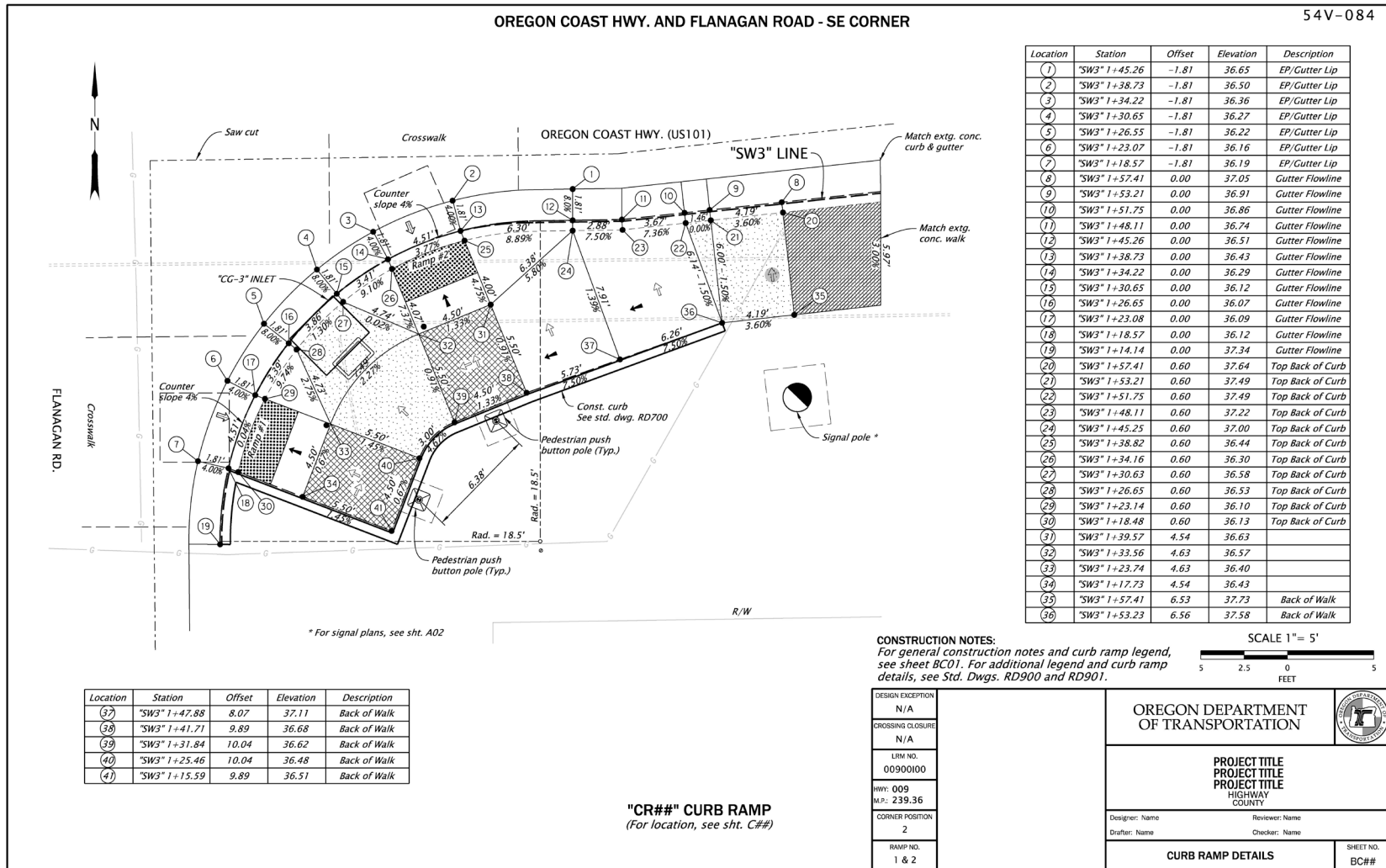
602.17.2 Labeling Critical Points Using Tables

An alternate method for curb ramp details sheets is shown in Figure 602-600-33. This method depicts a typical layout of a curb ramp detail using bubble note point identifiers for the various elevation points and stationing with an associated table listing the appropriate values of each point identified. The location number in the table with the various values (station, offset, description, elevation, 'E') listed, corresponds with the bubble note point identifier value.

Figure 600-34 is an example of a curb ramp data table constructed using the “Place Table” Ribbon Button under the Drawing Ribbon Workflow, on the Annotate Tab, in the Tables Ribbon Group.

After selecting the “Place Table” Ribbon Button, the user needs to find the two seed files that make up the ADA Curb Ramp Table (ADA_Table_Heading and ADA_Table_Body). Set the appropriate number of rows and columns to suit the parameters of the project. The text values can then be edited for each designated curb ramp point. For clarity, the alignment name is included next to the stationing for the reader. This is particularly important if the data table is not on the same detail sheet as the line work for the curb ramp detail.

Figure 602-600-33: Example of Curb Ramp Details Sheet Using Tables



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FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

Figure 600-34: Curb Ramp Data Table

CR## POINT TABLE					
Location	Station	Offset	Descr.	Elevation (ft)	E (in)
1	"CR"##+##.##	##	XXXXX	##.##	##
2	"CR"##+##.##	##	XXXXX	##.##	##
3	"CR"##+##.##	##	XXXXX	##.##	##
4	"CR"##+##.##	##	XXXXX	##.##	##
5	"CR"##+##.##	##	XXXXX	##.##	##
6	"CR"##+##.##	##	XXXXX	##.##	##
7	"CR"##+##.##	##	XXXXX	##.##	##
8	"CR"##+##.##	##	XXXXX	##.##	##

Section 603 Checklist

- North Arrow
- "V" number or "Local System"
- Project Title
- Sheet Title
- Sheet Number
- PE Stamp or Status Stamp (remove Status Stamp at PS&E)
- Names of Designer, Drafter, Reviewer and Checker (if applicable)
- Design Exception
- Crossing Closure
- LRM Number
- Highway name/number
- Milepoint
- Corner Position
- Ramp Number
- Curb Ramp Details Legend Sheet (if applicable): Include Curb Running Slope Section Views (with dimension values edited to suit project), Pavement Replacement at Curb Ramps (with dimensional values edited to suit project), Curb Ramp Linetypes Legend, Point Identifiers Legend, Curb Ramp Details General Notes, Point Nomenclature
- Curb Ramp Index Sheet(s) if applicable
- Curb ramp construction alignment labels with alignment name and radii callout

- Label curb ramp corner radius alignment
- Spot elevations provided in plan view or in a table
- Dimensions and slopes between all spot elevations
- Run Ramp position (i.e. R1, etc.)
- Dimension distance between crosswalk buttons, when present
- Pole foundation FG elevation, when present
- Match lines when necessary
- Right-of-way, access control and easement lines and labels if shown
- Appropriate slope arrows (cross slope, running slope, counter slope and flare slope)
- Existing topography trimmed to proposed line work (no contours shown)
- Utility above ground monuments and drainage inlets shown
- Road, street, highway, new approaches and waterway names
- All new roadway design
- Detectable warning or guide strip pattern
- Buffer strip pattern shown in softscape areas
- Level area (turning space/landing) pattern shown
- New sidewalk stippling
- New approaches and street/road connections
- Intended crossing shown and labelled
- “Traffic details checked” and “Structural details checked” concurrence signature blocks
- Label transition panels (no stipple pattern)
- Remove, adjust or protect in place legend and labelled as needed
- Curb exposure provided, if applicable
- Sawcut lines shown
- Gutter lines shown
- 4’x4’ Clear Space with marked crossings