Local Project Administration Manual & Resource Guide

Project Design

MaineDOT

Integrity - Competence - Service

Chapter 3 - Updated March 2024

Project Design

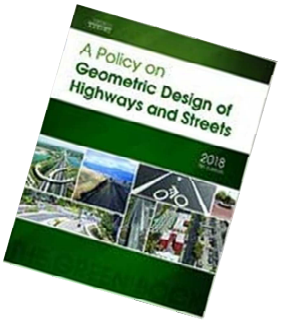
Successful projects start with practical designs that reflect sound engineering judgment. Well-developed construction plans and specifications enable contractors to understand what they must build and how the work should be done. Most local agencies, without engineering staffs, will hire consultant engineers. In some larger communities, municipal engineers may perform project design work.

Chapter 3 is set up to guide communities and consultants in meeting MaineDOT's expectations for design work on locally administered projects. It covers the following topics:

➲ MaineDOT Engineering guidance: www.mainedot.gov/engineering/practices-procedures/

3.1 Design Requirements

Design work must be supervised by a Maine licensed professional engineer. Additionally, all projects must follow MaineDOT's Engineering Practices and Procedures, Standard Specifications, and Standard Details.



MaineDOT also encourages consultants and municipal engineers to consult appropriate transportation industry references, notably the following:

- AASHTO: A Policy on Geometric Design of Highways and Streets;
- AASHTO: Guide for the Development of Bicycle Facilities;
- AASHTO: Guide for the Planning, Design, and Operation of Pedestrian Facilities;
- AASHTO: LRFD Bridge Design Specifications;
- Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD).

3.2 Format of Design Plans

Projects on state highways must be designed, whenever possible, using OpenRoads Designer software (ORD), by Bentley Systems. If MaineDOT will perform right-of-way work, electronic design files prepared with other software must be submitted to MaineDOT in ORD format so that staff in the MaineDOT Property Office can open them without translation or loss of accuracy.

During design, a MaineDOT crew generally will carry out the field survey for a project on a state or a state-aid highway. In such cases, the survey and the Existing Conditions Plan are prepared to MaineDOT standards using Bentley Systems software. Written approval is required to carry out survey with a non-MaineDOT crew.

Organizations using other design software should contract with consultants with experience converting electronic design files to MaineDOT format – and MaineDOT files to other formats. MaineDOT will return for corrections all electronic design files not meeting its requirements, set out in the policy referenced below.

➲ Policy on Electronic Exchange of CADD Data: https://www.maine.gov/mdot/caddsupport/

3.3 Public Involvement

Once preliminary plans are developed, the local agency sponsoring a project must give people an opportunity to weigh in on the design. An agency should determine an appropriate amount of public involvement based on a project's scope. Resurfacing a road, for example, should call for less public outreach than rebuilding a road or developing a new sidewalk or multi-use pathway.

Live and virtual meetings are common ways to inform people about a project. The agency managing a project should notify abutters by registered or certified mail about meetings for projects with potential impacts. The agency also should publicize events using its standard notification procedures, including by electronic means.

Multiple events may be necessary for complicated or controversial projects. If a project may affect a neighborhood where the primary language is not English, an agency may have to conduct outreach to populations with Limited English Proficiency. *(Refer to 3.3.1 on the next page.)*

➲ Examples of virtual public meetings are available on MaineDOT's website: https://storymaps.arcgis.com/stories/415913f8cfcf4fc5a5cc3039a8fe6dd4

A summary of the public process must be part of the Preliminary Design Report (PDR), covered in section 3.4. Upon completion of the final PDR, a local agency must fill out and send to MaineDOT LPA **Letter 10** certifying that it provided an opportunity for public participation.

➲ Word templates may be downloaded from the Public Participation section of MaineDOT's LPA Documents web page: www.mainedot.gov/lpa/lpadocuments/

3.3.1 Public Involvement and Traditionally Underserved Populations

Local agencies must strive to ensure full and fair participation in decision-making by all potentially affected populations. Outreach to communities that may be underserved by conventional methods – such as minority, low-income and Limited English Proficiency groups – helps to ensure that all customers and stakeholders have opportunities to influence transportation decision-making.

To ensure full and fair participation, local project sponsors should consider the following questions:

- Has an organization considered the composition of the affected area to determine whether there are minority populations, low-income populations, Tribes, or other protected groups?
- Has an organization gathered feedback from and involved minority and/or low-income populations in early planning stages?
- Has an organization sought to overcome linguistic, cultural, institutional, geographic, and other barriers to meaningful participation?
- Have non-traditional methods of outreach been considered?
- Has an organization worked with affected populations to determine how to deliver the benefits from a project while mitigating potential adverse impacts?

To maximize the effectiveness of efforts to engage underserved people, MaineDOT encourages local agencies to consider using the following tools, especially for large or controversial projects that may affect minority or low-income neighborhoods:

- Plan public meetings well in advance, using diverse print and electronic media.
- Determine what non-English languages and other cultural characteristics could limit public participation, and offer appropriate accommodations to reduce any barrier effect.
- Accept verbal and written comments in languages other than English, if necessary.
- Hold meetings and conduct outreach in affected neighborhoods, if appropriate, using community activity centers as meeting locations and venues for informal outreach.
- Hold meetings at convenient times and at locations that are accessible and welcoming to all, including those with disabilities. (This includes providing appropriate room set-up and, when requested, alternate formats of handouts.)
- Make available alternative methods for two-way flow of information and input between a local agency and people who are not likely to attend meetings.
- Use various illustration and visualization techniques to convey and project information, including, but not limited to, charts, graphs, photos, maps and the Internet.
- Reach out to community agency staff and local leaders with expertise in contacting and connecting with underserved people, to obtain advice and information about best practices and effective techniques.

3.4 Preliminary Design Report

Early in project development, a designer drafts preliminary plans (60 percent complete), identifies initial impacts, and prepares a preliminary cost estimate. The primary product at this point is a Preliminary Design Report (PDR), which is submitted to a MaineDOT project manager for review using a standard form in the Engineering and Design section of the LPA Documents page: www.mainedot.gov/lpa/lpadocuments/

Local agencies must submit an initial draft PDR and, after addressing any comments, a final PDR that provides the following information, at a minimum:

- Project location, with map;
- Design criteria;
- Description of existing conditions, including traffic volumes;
- Typical sections with pavement structure for travel lanes, shoulders and drives/entrances;
- Proposed exceptions to controlling design standards (if applicable);
- Identification of environmental, utility and right-of-way impacts;
- Compliance with Americans with Disabilities Act and MaineDOT Complete Streets Policy;
- Results of meetings and other public involvement activities; and
- Construction cost estimate, using MaineDOT items. (Refer to section 3.6.)

3.5 Plan Impacts Complete

Upon approval of the PDR, a project advances to final design and the Plan Impacts Complete (PIC) milestone. A project reaches PIC when design is at least 80 percent complete, right-of-way needs have been determined, and MaineDOT has signed off on the highway, traffic, environmental and drainage designs, as applicable. At this point, updated plans and cost estimates must be sent to the MaineDOT project manager for review and comment as .pdf files.

A project generally reaches PIC when the plans show these details, as applicable:

- Plan views with cut/fill lines;
- Cross-sections every 50 feet showing proposed limits of slopes and new construction;
- Beginning and end of project stations;
- Bearings on the baseline;
- Locations and limits of driveways and entrances to be constructed;
- Type of surface treatment on drives and entrances;
- Locations of curbing, sidewalks and islands, including their geometrics;
- Drainage scheme showing underdrain, basins, culverts, ditches and outlet locations;
- Calculated drainage flows;
- Clearing limits and individual trees/shrubs to be removed, regardless of size;
- Locations of structures to be installed, such as retaining walls;
- Locations of all signal poles, special street lighting, conduits and junction boxes; and
- Existing utilities on plans and cross sections with proposed new locations.

3.6 Using MaineDOT Items

Engineer's estimates and bid documents must use MaineDOT items. These items refer to sections of MaineDOT's Standard Specifications, providing consistency in how work is carried out, measured, tested and paid for. Using MaineDOT items also enables design staff to check recent bid-price history, available from MaineDOT.

Note: This section provides general guidance; it should not be treated as a comprehensive listing. Common items are listed in Appendix 3B, starting on page 3-12. Consult with MaineDOT if you cannot find an appropriate item number; do not create an item without MaineDOT approval.

➲ MaineDOT's **Item Dictionary** is online: www.mainedot.gov/contractors/publications/

- **Division 200 – Earthwork** generally covers clearing and excavation. Commonly used items:
  - 201.11 Clearing;
  - 202.202 Removing Pavement Surface;
  - 203.20 Common excavation;
  - 203.21 Rock excavation;
  - 203.24 Common borrow & 203.25 Granular borrow.

- **Division 300 – Bases** generally covers aggregates. Base and subbase gravels begin with **304**.

- **Division 400 – Pavement** items begin with **403**. Hot-mix asphalt pavement typically is either 19.0 mm, 12.5 mm or 9.5 mm. Check the Item Dictionary for appropriate item numbers.

- **Division 500 – Structures** covers structural items used primarily in bridge and marine projects. Typical items fall under **502** (structural concrete); **504** (structural steel); **528** (structural timber); and **531** (marine-related items).

- **Division 600 – Miscellaneous Construction** covers a variety of common items, as follows:
  - 603 – culvert pipe;
  - 604 – catch basins;
  - 608 – sidewalks;
  - 609 – curb;
  - 615 to 621 – landscape items;
  - 626 & 634 – electrical / lighting items;
  - 627 – roadway striping;
  - 643 – traffic signals;
  - 645 – highway signs;
  - 652 – traffic control;
  - 654 – intelligent transportation systems (ITS); and
  - 659.10 – mobilization.

Note: An 800-series section in the Item Dictionary covers miscellaneous items not found elsewhere.

3.7 Design and the Americans with Disabilities Act

The Americans with Disabilities Act of 1990 (the ADA) prohibits discrimination against people with disabilities. In the context of locally administered projects, the law frequently requires highway improvements to address ADA deficiencies. This section is intended as a summary for designers. For additional guidance, see Appendix 3A, "Americans With Disabilities Act Guidance."

Many types of highway projects must improve access to existing pedestrian facilities to the *maximum extent feasible*. This requirement applies to new construction, reconstruction, rehabilitation, and pavement treatments such as overlay, mill-and-fill, in-place recycling and micro-surfacing.

ADA-compliant curb ramps must be built within the limits of a project where barriers restrict access to sidewalks and other walkways. MaineDOT requires installation of detectable warning fields and, where warranted, upgrades to pedestrian signals so that persons with disabilities can use them.

➲ **ADA resources** are online: www.mainedot.gov/civilrights/ada/resources-engineers/

Curb ramps should be designed and built in accordance with MaineDOT's Standard Details, sections 801(11-27). If they cannot be constructed to comply fully with the ADA, they must comply with the law to the maximum extent feasible, with deficiencies explained and documented on MaineDOT's standard **ADA Technical Infeasibility Form,** available at the link cited above.

The summary below provides general guidance for items common to locally administered projects:

☐ **New sidewalks:**

- The sidewalk standard for state highways and projects funded by MaineDOT is 5 feet wide, excluding curbing, with a cross-slope standard of 1.5 percent.

☐ **Curb ramps:**

- Enable a person with a mobility disability to travel from a sidewalk on one side of the street – over or through curbs and traffic islands – to a sidewalk on the other side of the street;
- Running slope cannot exceed 8.33 percent;
- Cross-slope standard is 1.5 percent;
- Ramps must be a minimum of 5 feet clear width;
- The bottom of a ramp must be flush with the street;
- Landings must be level, with a grade no greater than 2 percent in each direction.

☐ **Detectable warnings:**

- Alert people with visual impairments to stop at roadways;
- Must be placed at mid-block crossings and at intersections with traffic signals or stop signs;
- Should be the full width of any curb ramp and at least 2 feet deep;
- Refer to MaineDOT Standard Detail 608(02) for guidance.

3.8 Design Exceptions

Designers and engineers often face tradeoffs. An appropriate design balances cost, safety, mobility, social and environmental impacts, and the needs of a variety of users. When it isn't practical to meet standard design criteria, an appropriate solution may be to use a design value outside the standard range – if the designer has analyzed potential impacts to safety and operations.

A design exception is a documented decision to design an element of the transportation system to criteria outside of established guidelines. For projects along state highways, exceptions to the criteria in the matrix below must be highlighted on the design plans, with a memo describing the controlling values and the nature of each proposed exception.

Design exception form is found under "Engineering and Design" on the LPA Documents page: www.mainedot.gov/lpa/lpadocuments/

Requests for design exceptions on locally administered projects must be sent initially to the manager of the MaineDOT Multimodal Program. From there, a design exception request may be elevated to the MaineDOT Engineering Council, as warranted and shown below.

Highway Corridor Priority	Applicable Controlling Criteria	Approval Level
1-2 (NHS)	CS, CZ, DS, HC, LW, MG, SC, SSD, SR, SW, VC	MaineDOT Engineering Council *
3-4 (State Highways) 5 (Local)	CS, CZ, DS, HC, LW, MG, SC, SSD, SR, SW, VC	MaineDOT Program Manager **

- CS Cross Slope
- CZ Clear Zone
- DS Design Speed
- HC Horizontal Curve Radius
- LW Lane Width
- MG Maximum Grade
- SC Structural Capacity
- SR Superelevation Rate
- SSD Stopping Sight Distance
- SW Shoulder Width
- VC Vertical Clearance

** Design exceptions on preservation projects shall be approved at the Program level. Design exceptions on rehabilitation projects can be approved at the Program level, with consideration given to submitting such exceptions to the Engineering Council on complex projects.*

*** Design exceptions on complex projects should be submitted to the Engineering Council.*

3.9 MaineDOT TAME Process

MaineDOT uses Traffic Analysis Management and Evaluation (TAME) to address potential traffic delays from construction. Upon finalizing a Preliminary Design Report (PDR), a local agency should submit to the MaineDOT project manager a TAME Request Form, which can be downloaded using the link below.

After reviewing the request, MaineDOT may prepare a special provision restricting lane closures (Section 105, Limitation of Operations). Projects on roads with heavy seasonal traffic or average daily traffic volumes greater than 10,000 are likely to have some restrictions on lane closures.

➲ TAME guidance is online: www.mainedot.gov/engineering/practices-procedures/

3.10 Design Checks

MaineDOT requires consultants and municipal engineers working on locally administered projects to perform and document quality-control (QC) design checks at the milestones below:

- At submittal of the draft and final Preliminary Design Report (PDR);
- At submittal of Design Plan Impacts; and
- At submittal of draft and final plans, specifications & estimate (PS&E).

The QC process will consist of reviewing all calculations, design assumptions, contract provisions, plan set, cost estimates and all other relevant documents. The design reviewer must be a qualified individual other than the originator of the documents.

The design-review process should cover the following tasks:

- Summarizing the design-check process, including tools used.
- Reviewing the calculations for each design element.
- Assuring that the design meets MaineDOT standards, policies and practices.
- Documenting the checks performed through initials of the reviewer, the date on which a review was performed, and comments by a reviewer.
- Checking for compliance with legal and regulatory requirements, such as the Americans with Disabilities Act (ADA) and Manual on Uniform Traffic Control Devises (MUTCD).
- Reviewing the cost estimate, including quantity and unit price analysis with comparison to established budget and project scope. *MaineDOT pay items must be used.*
- Analyzing the proposed design for potential construction and maintenance issues.

MaineDOT will verify the design checks through its quality-assurance reviews of project plans. MaineDOT staff will not review plan submittals that lack evidence of design checks until they receive such documentation.

Appendix 3A:
Americans with Disabilities Act Guidance

- Additional ADA resources are available online:
www.maine.gov/mdot/civilrights/ada/resources-engineers/

Maine Department of Transportation

Highway Program

Design Guidance

Title: Minimum ADA Requirements for Pedestrian Facilities	Issue Date: November 1, 2017
Discipline: General Engineering	Revised Date: **October 24, 2023**
Originator: Highway Program	
Approved By: Bradford Foley, P.E.	

Background:

The MaineDOT ADA Title II Transition Plan specifies what ADA standards MaineDOT has adopted. The MaineDOT ADA Compliance Policy specifies what improvements will be required, based on project scope. This document is intended to provide guidance on what makes each individual element of a pedestrian facility ADA compliant. It should be the basis for determining if an existing pedestrian facility is ADA compliant and for designing and constructing new or improved pedestrian facilities.

Guidance:

Existing Pedestrian Facilities

If an existing pedestrian facility meets the requirements listed in Table 1 it is considered an ADA compliant facility. Such facilities do not need to be improved if it is beyond the planned scope of work to do so. Consideration should be given to the overall system of pedestrian facilities on the project to make sure there are no non-ADA safety issues that need to be addressed. Examples of such non-ADA safety issues include cross walk locations, refuge areas, and visibility.

New or Reconstructed Pedestrian Facilities

New pedestrian facilities, or existing facilities that must be reconstructed, shall be designed and built to meet the minimum requirements listed in Table 1.

More detailed guidance on the design of pedestrian curb ramps can be found in the Standard Details.

Exceptions

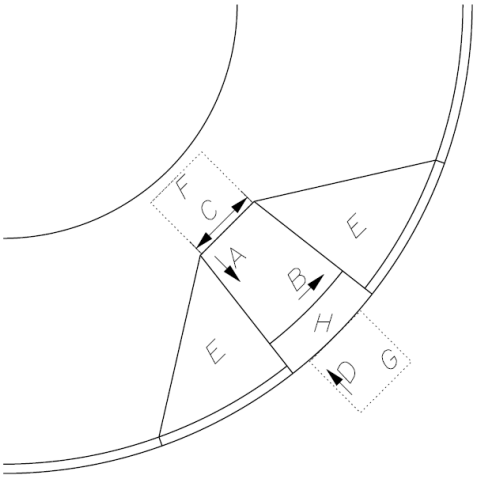
The ADA Compliance Policy allows exceptions to be made when it is "technically infeasible" or "physically impractical" to meet all current ADA requirements. In some cases, there may be physical constraints that are beyond project scope to modify or remove that make it infeasible to meet ADA requirements. Examples of these constraints include, but are not limited to, underground and overhead utility structures, bridge structures, building entrances at back of sidewalk, retaining walls, and established landscaping such as large trees. In such cases, the facility must be upgraded to the maximum extent possible. Technical infeasibility or physical impracticality may not be determined solely based on cost.

The ADA Compliance Policy requires that locations where full compliance with current ADA standards is not feasible be documented according to the following established procedure:

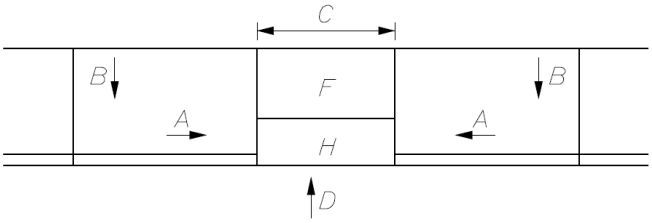
- If an element does not meet the minimum requirements for pedestrian facilities listed in Table 1, include discussion in the ADA compliance section of the Preliminary Design Report and submit an ADA Technical Infeasibility Form for review to the appropriate Program Manager or Region Manager and the Title II ADA Coordinator. Approval may be granted at the Program or Region level or forwarded to the Engineering Council for further review.

		Minimum Requirements for Pedestrian Facilities
		SIDEWALKS
Cross Slope		1.5% (1:67) (standard) 2% (1:50) (maximum)
Clear Width		5 feet, excluding curb (standard) 4 feet, excluding curb (minimum) *3 feet, excluding curb, may be acceptable if waived by the Chief Engineer.* *Widths less than 5 feet require a 5 foot by 5 foot passing space every 200 feet.*
		CURB RAMPS
Running Slope	A	Max. 8.33% (1:12)
Cross Slope	B	1.5% (1:67) (standard) 2% (1:50) (maximum) *Ramp cross slope at street crossings without stop or signal control may match roadway profile.*
Clear Width	C	Min. 4' – 8" *Provide 5'-8" clear width when feasible. Existing ramp width may remain 4 feet.*
Counter Slope	D	Max. 5% (1:20) *Adjacent surface must be flush with the ramp.*
Flared Sides	E	Max. 10% (1:10)
Turning Space	F	4 feet by 4 feet *Maximum slope of 2% in any direction. May include Detectable Warnings.*
Clear Space	G	4 feet by 4 feet *Located at the bottom of perpendicular ramps outside active travel lanes.*
Detectable Warnings	H	*Required at traffic-controlled intersections and mid-block crossings.* *Extend the full width of curb opening except for a 4" maximum border.*

Table 1. Minimum Requirements for Pedestrian Facilities



Perpendicular Ramp



Parallel Ramp

MaineDOT ADA Compliance Policy for Construction and Maintenance

- Revised August 11, 2016 –

❑ Overview

MaineDOT is responsible for implementing the requirements of Section 504 of the Rehabilitation Act and Title II of the Americans with Disabilities Act (ADA), and all applicable enforcement regulations, on its transportation facilities. This policy identifies actions necessary to comply with ADA requirements as work is performed on the highway and bridge system.

NOTE: *This policy applies to locally administered projects with federal or state funding. MaineDOT will expect municipalities and their design consultants to abide by the requirements.*

❑ General

Newly constructed, reconstructed, or rehabilitated pedestrian facilities will fully meet current ADA accessibility standards. MaineDOT will maintain its design guides and Standard Details to ensure that all elements of current ADA compliance are incorporated into roadway improvements as required by this policy.

❑ Alterations and Maintenance

When walkways or other right-of-way elements intended to assist pedestrians are altered as part of a roadway improvement, those walkways and elements must be upgraded to meet current ADA standards. While many maintenance activities are not considered alterations and do not trigger requirements to perform ADA upgrades, most other work, including surface paving treatments and traffic signal replacements, do cause ADA improvements to be made. Table 1 below provides the minimum ADA upgrades required for a variety of work scopes.

❑ Consideration beyond minimum requirements

In determining the extent to which ADA improvements must be performed within the limits of work, designers should consider the accessibility of existing pedestrian facilities in context with local pedestrian use and needs.

- Areas of heavy pedestrian use or the presence of hospitals, retirement centers, veterans facilities, schools, libraries and government buildings would give compelling reason to consider more extensive upgrades, particularly if there are barriers along the adjacent sidewalk. In these areas, municipalities and other local agencies should seek guidance about the extent of ADA improvements from MaineDOT project managers, in consultation with the Multimodal Program Manager and Office of Civil Rights.

- If multiple ADA modifications are being made to meet the minimum requirements, designers should consider upgrading all pedestrian facilities within the project limits rather than leaving a patchwork of compliant and non-compliant ADA elements.

- The extent of work for traditional improvement scopes should not be altered solely to avoid the requirements of this policy.

❑ Crosswalks and curb ramps

Any paving work affecting an existing crosswalk is considered an alteration that requires accessibility review and upgrades.

- When a crosswalk is altered, curb ramps must be installed or brought to current ADA standards where the crosswalk connects to a sidewalk or other pedestrian walkway.
- When a crosswalk is altered at an intersection, upgrades will be made at all corners, even if outside the project limits.
- Curb ramp upgrades will be made as required at driveway/crosswalk crossings when paving activities impact crossings.
- Current standards will be met for all required and applicable curb ramp elements including slopes, width, cross slope, landing area and detectable warnings.

❑ Pedestrian signal systems

When the accessibility of an existing pedestrian signal system is impacted by an alteration, such as improper button height or slopes at pedestrian poles, the pedestrian signal system must be upgraded to meet current ADA standards. The replacement of traffic signals and the relocation of pedestrian poles are also actions that require upgrade of the entire pedestrian signal system.

❑ Exceptions

Technically infeasible situations

If it is technically infeasible or physically impractical to meet all current ADA standards, the standards will be met to the maximum extent possible. Locations where full compliance is not feasible must be documented. If the non-compliant element cannot be improved enough to remove barriers, the municipality managing a locally administered project must consult with the MaineDOT Multimodal Program, which may contact the MaineDOT Civil Rights Office to determine the appropriate course of action.

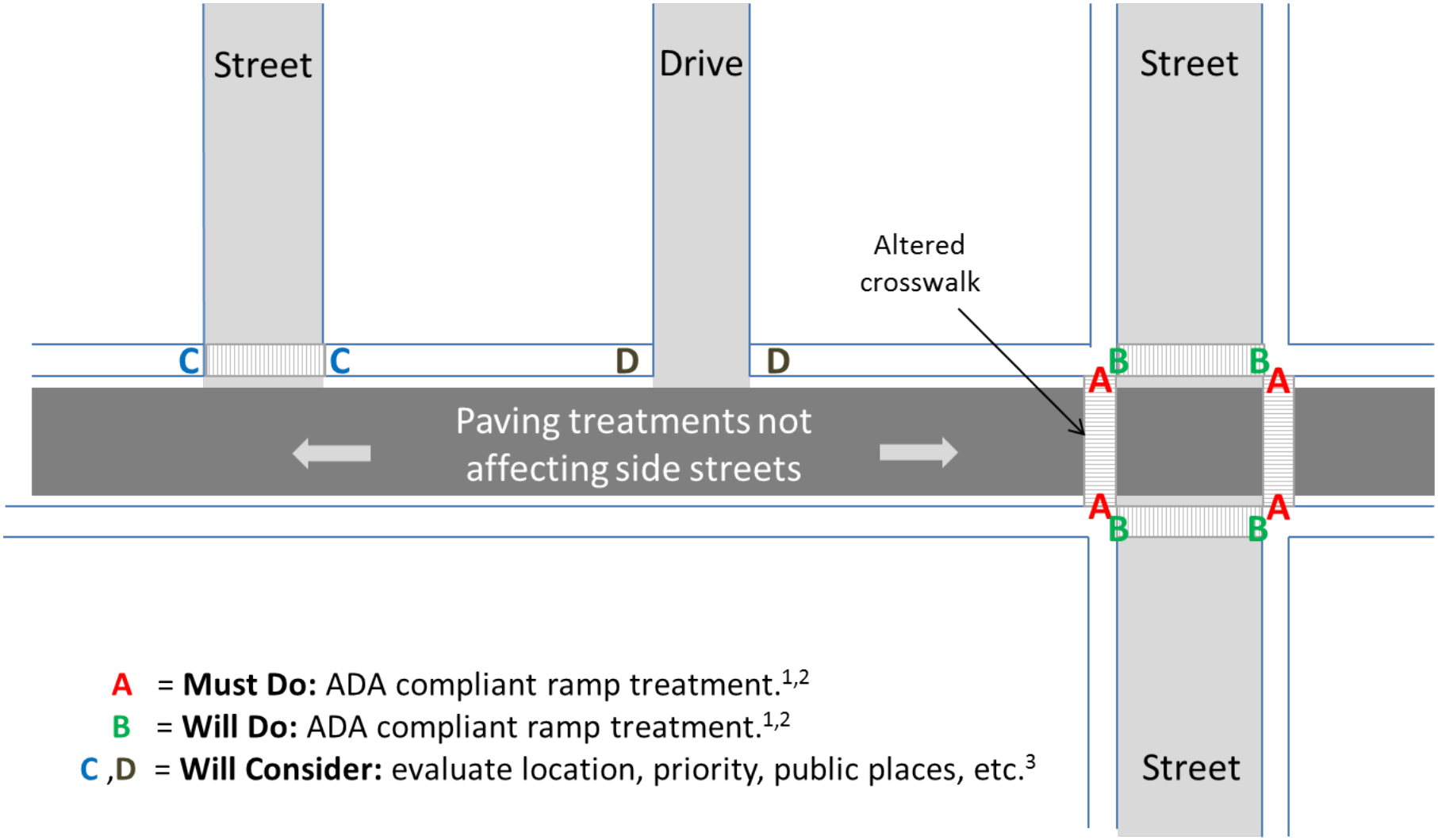
Federal "Safe Harbor" provision

By federal regulation, existing accessibility elements constructed or altered before March 15, 2012 that comply with 1991 ADA Accessibility Guidelines do not have to be modified to comply with the 2010 standards. If this exception is utilized and detectable warnings are not present, detectable warnings will be added at locations determined appropriate as described in the Alterations and Maintenance section above.

❑ Responsibilities

For locally administered capital improvements, the municipality managing a project, in consultation with its contracted design consultant if applicable, is responsible for reviewing existing pedestrian and accessibility elements within the limits of a project and determining what ADA improvements must be made in accordance with this policy.

TYPE OF WORK	ADA IMPROVEMENTS NEEDED?	MINIMUM IMPROVEMENTS
▪ **New Construction** ▪ **Reconstruction** ▪ **Rehabilitation**	YES	Pedestrian facilities must be constructed or upgraded to meet current ADA requirements within the project limits.
Paving Treatments: ▪ Mill and fill / Overlay ▪ Micro-surfacing ▪ Hot or Cold In-Place Recycling ▪ PMRAP ▪ Ultra-Thin Bonded Wearing Course ▪ Light Capital Paving	YES	- Upgrade curb ramps where treatment crosses or impacts existing pedestrian elements or routes within project limits. - If a crosswalk is altered at an intersection, all corners must be upgraded even if outside project limits. - Upgrade pedestrian signals to current ADA standard if the improvement affects the accessibility of the system.
Signal: New location that warrants pedestrian facilities	YES	Install or upgrade intersection pedestrian facilities to meet current ADA standards, including curb ramps and pedestrian signal systems.
Signal Replace in Kind	YES	Upgrade intersection pedestrian facilities to meet current ADA standards, including curb ramps and pedestrian signal systems.
Signal: Modification involving excavation or right-of-way that warrants pedestrian facilities.	YES	Upgrade intersection pedestrian facilities to meet current ADA standards, including curb ramps and pedestrian signal systems.
Lighting	NO	
Striping	NO	
Maintenance Activities: Chip Seals, Crack Filling and Sealing, Dowel Bar Retrofit, Fog Seals, Joint Crack Seals, Joint Repair, Pavement Patching, Scrub Sealing, Slurry Seals, Spot High-Friction Treatments, Surface Sealing.	NO	Note: Some combinations of these may require ADA upgrades.

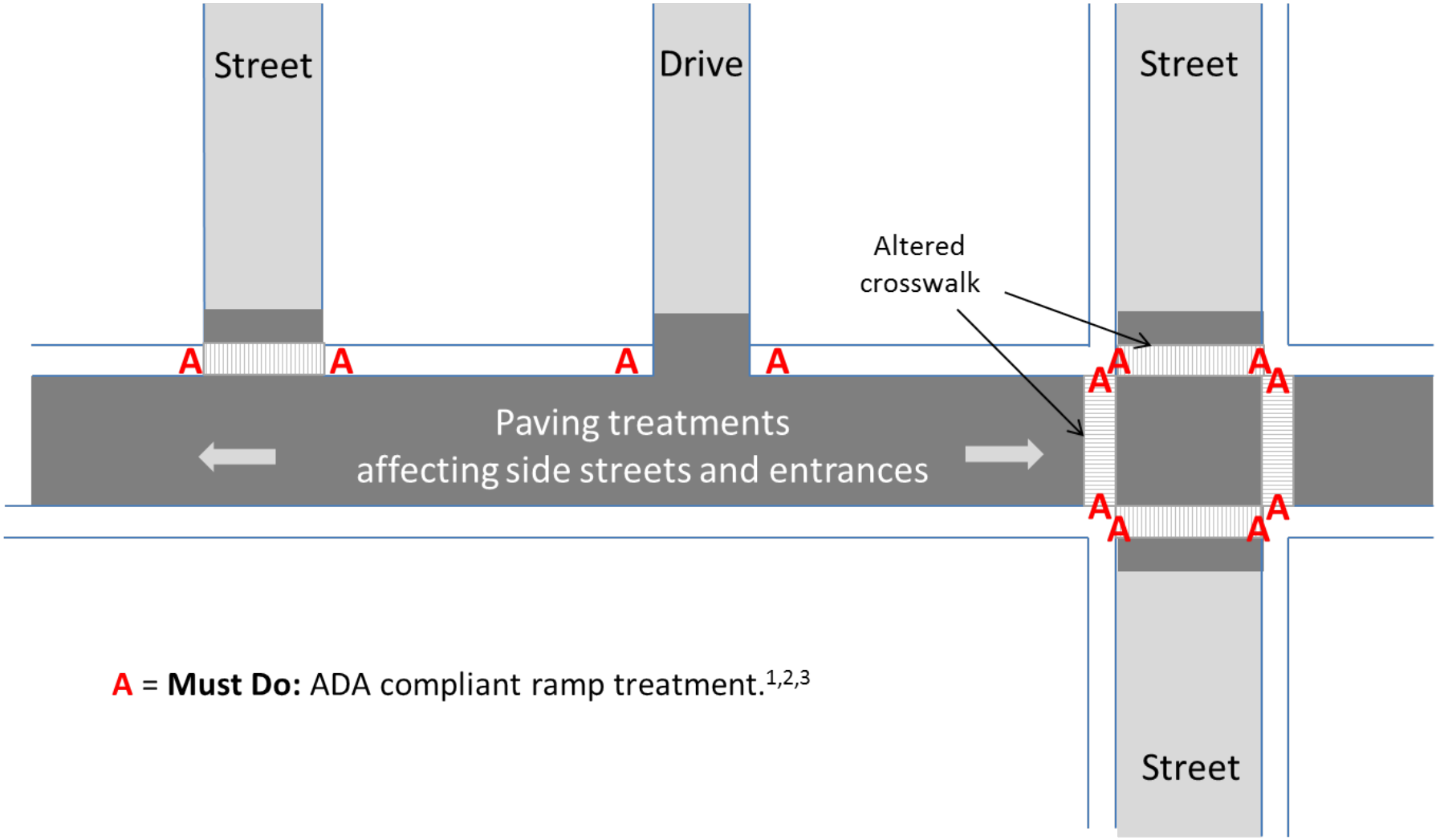


A = **Must Do:** ADA compliant ramp treatment.[1,2]

B = **Will Do:** ADA compliant ramp treatment.[1,2]

C ,**D** = **Will Consider:** evaluate location, priority, public places, etc.[3]

1. Current ADA standards must be met unless existing ramps meet 1991 ADA Standards or 1991 UFAS.
2. Truncated domes will be installed at all modified ramps at roadway intersections, but not at drive crossings.
3. Consideration should be given to remove all physical barriers within the project limits along the roadway being improved and the adjacent sidewalks. Project guidance is available through the Highway Program Manager and the Director of the Civil Rights Office.

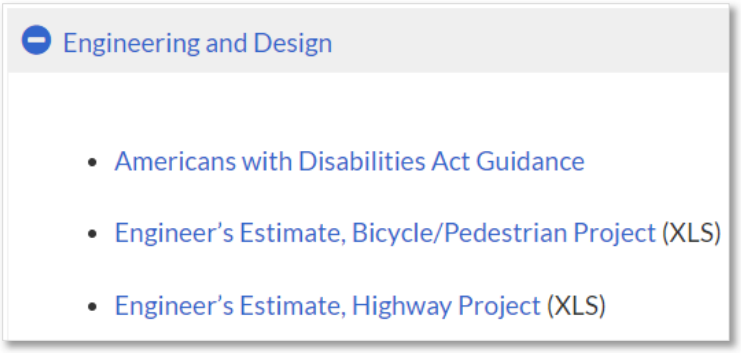


A = **Must Do:** ADA compliant ramp treatment.[1,2,3]

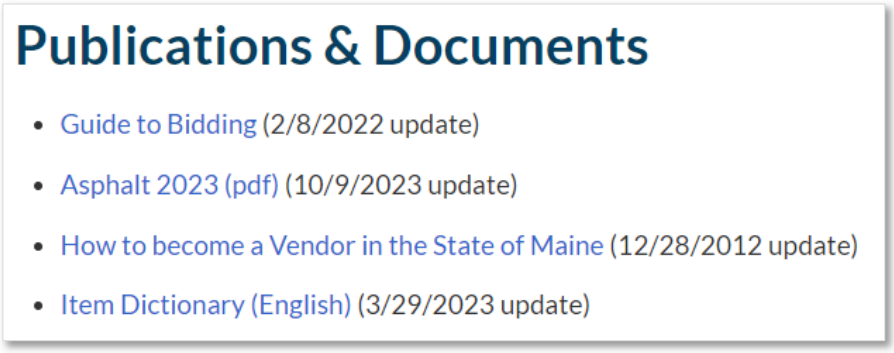
1. Current ADA standards must be met unless existing ramps meet 1991 ADA Standards or 1991 UFAS.
2. Truncated domes will be installed at all modified ramps at roadway intersections , but not at drive crossings.
3. Consideration should be given to remove all physical barriers within the project limits along the roadway being improved and the adjacent sidewalks. Project guidance available through the Highway Program Manager or the Director of the Civil Rights Office.

Appendix 3B:
MaineDOT Item Numbers

- ❑ Electronic files in Excel are found in the **Engineering and Design** section of the LPA Documents web page: www.mainedot.gov/lpa/lpadocuments/



- ❑ MaineDOT's **Item Dictionary** is online: www.mainedot.gov/contractors/publications/



ESTIMATE TEMPLATE: BICYCLE / PEDESTRIAN PROJECT

INSTRUCTIONS:

1. This is an estimate template for a sidewalk / multi-use pathway, with common items listed for guidance.
2. Items that don't apply should be deleted; other items may need to be added from the Item Dictionary.
3. The notes in red are for guidance and should be deleted from estimates sent to MaineDOT.
4. MaineDOT's Item Dictionary is online: https://www.mainedot.gov/contractors/publications/

MaineDOT WIN:
Project Location:
Date:

Item No.	ITEM DESCRIPTION	UNIT	QTY.	UNIT PRICE	AMT.
201.11	CLEARING	ACRE			
201.23	REMOVING SINGLE TREE TOP ONLY	EA			
201.24	REMOVING STUMP	EA			
202.202	REMOVING PAVEMENT SURFACE	SY			
203.20	COMMON EXCAVATION	CY			
203.21	ROCK EXCAVATION	CY			
203.24	COMMON BORROW	CY			
203.25	GRANULAR BORROW	CY			
203.35	CRUSHED STONE FILL	CY			
206.0611	STRUCTURAL EARTH EXCAVATION - DRAINAGE AND MINOR STRUCTURES	CY			
206.07	STRUCTURAL ROCK EXCAVATION - DRAINAGE AND MINOR STRUCTURES	CY			
304.10	AGGREGATE SUBBASE COURSE - GRAVEL	CY			
403.208	HOT MIX ASPHALT, 12.5 MM SURFACE	TON			
403.209	HOT MIX ASPHALT, 9.5 MM (SIDEWALKS, DRIVES, INCIDENTALS) – ***Note:*** *Behind curb*	T			
403.21	HOT MIX ASPHALT, 9.5 MM – ***Note:*** *Machine placed, for shoulders/travel lanes*	T			
403.213	HOT MIX ASPHALT, 12.5 MM BASE	T			
409.15	BITUMINOUS TACK COAT - APPLIED	GAL			
411.13	STONE DUST SURFACE COURSE - ***Note:*** *Use on unpaved multi-use pathways.*	T			
502.21	STRUCTURAL CONCRETE: ABUTMENTS AND RETAINING WALLS – ***Note:*** *Pedestrian bridges*	CY			
528.20	TIMBER STREAM CROSSING BRIDGE	LS			
530.04	PREFABRICATED BRIDGE STRUCTURE AND ASSEMBLY – ***Note:*** *Pedestrian bridge*	LS			
603.159	12 INCH CULVERT PIPE OPTION III	LF			
603.17	18 INCH CULVERT PIPE OPTION I – ***Note:*** *Option I is used under driveways*	LF			
603.179	18 INCH CULVERT PIPE OPTION III	LF			
603.19	24 INCH CULVERT PIPE OPTION I	LF			
603.199	24 INCH CULVERT PIPE OPTION III	LF			
603.20	30 INCH CULVERT PIPE OPTION I	LF			
603.209	30 INCH CULVERT PIPE OPTION III	LF			
603.21	36 INCH CULVERT PIPE OPTION I	LF			
603.219	36 INCH CULVERT PIPE OPTION III	LF			
604.072	CATCH BASIN TYPE A1-C – ***Note:*** *Use Type A with granite curb and 3-flange frames.*	EA			
604.092	CATCH BASIN TYPE B1-C – ***Note:*** *Use Type B with paved/concrete curb and 4-flange frames.*	EA			
604.161	ALTERING CATCH BASIN	EA			
604.18	ADJUSTING MANHOLE OR CATCH BASIN TO GRADE	EA			
604.2402	BEHIND CURB CATCH BASIN	EA			
604.242	CATCH BASIN TYPE F3 – ***Note:*** *Type F is small; number is the depth (ft.)*	EA			
604.244	CATCH BASIN TYPE F4	EA			
604.246	CATCH BASIN TYPE F5	EA			
604.248	CATCH BASIN TYPE F6	EA			
604.262	CATCH BASIN TYPE B5-C – ***Note:*** *Offset cone, cascade grate*	EA			
605.09	6 INCH UNDERDRAIN TYPE B – ***Note:*** *Perforations down with Type B*	LF			
605.11	12 INCH UNDERDRAIN TYPE C – ***Note:*** *Perforations up with Type C*	LF			

Item No.	ITEM DESCRIPTION	UNIT	QTY.	UNIT PRICE	AMT.
605.12	15 INCH UNDERDRAIN TYPE C	LF			
605.13	18 INCH UNDERDRAIN TYPE C	LF			
606.47	SINGLE WOOD POST	EA			
606.52	MAILBOX REMOVE & RESET	EA			
606.611	TIMBER GUARDRAIL	LF			
607.16	CHAIN LINK FENCE - 4 FOOT	LF			
607.163	CHAIN LINK FENCE - 4 FOOT PVC COATED	LF			
607.22	CEDAR RAIL FENCE	LF			
607.24	REMOVE AND RESET FENCE	LF			
607.26	REMOVE AND RESET STONE WALL	LF			
608.08	REINFORCED CONCRETE SIDEWALK	SY			
608.26	CURB RAMP DETECTABLE WARNING FIELD	SF			
608.32	CONCRETE BASE FOR BENCH TYPE 1	EA			
608.45	CONSTRUCT SIDEWALK	SY			
609.11	VERTICAL CURB TYPE 1 – ***Note:*** *Type 1 is granite curb*	LF			
609.21	CONCRETE SLIPFORM CURB - ***Note:*** *For sidewalk curb and for curb ramps.*	LF			
609.219	CONCRETE SLIPFORM CURB - TERMINAL END	LF			
609.221	TERMINAL CURB TYPE 1	LF			
609.31	CURB TYPE 3 – ***Note:*** *Type 3 is paved curb*	LF			
610.08	PLAIN RIPRAP	CY			
610.18	STONE DITCH PROTECTION	CY			
613.319	EROSION CONTROL BLANKET	SY			
615.07	LOAM	CY			
618.13	SEEDING, METHOD 1 – ***Note:*** *For lawns (Unit = 1,000 square feet.)*	UNIT			
618.14	SEEDING, METHOD 2 – ***Note:*** *Mowable slopes*	UN			
618.141	SEEDING, METHOD 3 – ***Note:*** *Non-mowable areas*	UN			
619.12	MULCH	UN			
621.951	BIKE RACK	LS			
620.58	EROSION CONTROL GEOTEXTILE – ***Note:*** *Use under riprap*	SY			
626.21	METALLIC CONDUIT	LF			
626.22	NON-METALLIC CONDUIT	LF			
626.412	20 INCH DIAMETER FOUNDATION – ***Note:*** *Use beneath pedestal pole*	LF			
627.733	4 INCH WHITE OR YELLOW PAINTED PAVEMENT MARKING LINE	LF			
627.75	WHITE OR YELLOW PAVEMENT & CURB MARKING – ***Note:*** *Crosswalks and painted curb*	SF			
627.77	REMOVING PAVEMENT MARKINGS	SF			
629.05	HAND LABOR, STRAIGHT TIME	HR			
631.12	ALL PURPOSE EXCAVATOR (INCLUDING OPERATOR)	HR			
631.172	TRUCK - LARGE (INCLUDING OPERATOR)	HR			
631.32	CULVERT CLEANER (INCLUDING OPERATOR)	HR			
639.19	FIELD OFFICE TYPE B	LS			
641.12	BENCH	EA			
641.34	TRASH RECEPTACLE	EA			
643.6001	SOLAR POWERED LED PED CROSSWALK BEACON	EA			
643.62	RECTANGULAR RAPID FLASHING BEACON	EA			
643.807	LIGHTED CROSSWALKS	EA			
643.92	PEDESTAL POLE	EA			
645.103	DEMOUNT GUIDE SIGN	EA			
645.106	DEMOUNT REGULATORY, WARNING, CONF & RTE MARKER SIGN	EA			
645.113	REINSTALL GUIDE SIGN	EA			
645.116	REINSTALL REGULATORY, WARNING, CONF & RTE MARKER SIGN	EA			
645.292	REGULATORY, WARNING, CONF & RTE MARKER SIGNS TYPE II	EA			
645.306	FLEXIBLE REFLECTORIZED DELINEATOR	EA			
652.33	DRUM	EA			
652.34	CONE	EA			
652.35	CONSTRUCTION SIGNS	SF			
652.36	MAINTENANCE OF TRAFFIC CONTROL DEVICES	CD			

Item No.	ITEM DESCRIPTION	UNIT	QTY.	UNIT PRICE	AMT.
652.38	FLAGGERS	HR			
656.75	TEMPORARY SOIL EROSION AND WATER POLLUTION CONTROL	LS			
659.10	MOBILIZATION	LS			
672.10	PRECAST CONCRETE BLOCK GRAVITY WALL	SF			
673.10	WET CAST SMALL LANDSCAPE BLOCK WALL	SF			
801.03	TEST PITS	EA			
841.48	BOLLARDS	EA			
841.481	REMOVABLE BOLLARD	EA			
		TOTAL:			

ESTIMATE TEMPLATE: HIGHWAY PROJECT

INSTRUCTIONS:

1. Below is an estimate template for a resurfacing / reconstruction / intersection, with common items listed.
   - Non-applicable items should be deleted.
   - This does not list everything; other items you may need are found the Item Dictionary.
2. The notes in red are for guidance only and should be deleted from estimates sent to MaineDOT.
3. The Item Dictionary is online: **https://www.maine.gov/mdot/contractors/publications/**

WIN:
Location:
Date:

ITEM	ITEM DESCRIPTION	UNIT	QTY.	UNIT PRICE	AMT.
201.11	CLEARING	ACRE			
201.23	REMOVING SINGLE TREE TOP ONLY	EA			
201.24	REMOVING STUMP	EA			
202.202	REMOVING PAVEMENT SURFACE	SY			
202.203	PAVEMENT BUTT JOINTS	SY			
203.20	COMMON EXCAVATION	CY			
203.21	ROCK EXCAVATION	CY			
203.24	COMMON BORROW	CY			
203.25	GRANULAR BORROW	CY			
203.33	SPECIAL FILL	CY			
203.34	CRUSHED STONE FILL	CY			
206.061	STRUCTURAL EARTH EXCAVATION - DRAINAGE AND MINOR STRUCTURES	CY			
206.070	STRUCTURAL ROCK EXCAVATION - DRAINAGE AND MINOR STRUCTURES	CY			
304.10	AGGREGATE SUBBASE COURSE - GRAVEL	CY			
304.14	AGGREGATE BASE COURSE - TYPE A	CY			
304.15	AGGREGATE BASE COURSE - TYPE B	CY			
403.208	HOT MIX ASPHALT, 12.5 MM SURFACE	T			
403.2081	12.5 MM POLYMER MODIFIED HOT MIX ASPHALT – ***Note:*** *Higher truck volumes*	T			
403.209	HOT MIX ASPHALT, 9.5 MM (SIDEWALKS, DRIVES, INCIDENTALS) – ***Note:*** *Behind curb*	T			
403.210	HOT MIX ASPHALT, 9.5 MM	T			
403.211	HOT MIX ASPHALT (SHIMMING)	T			
403.213	HOT MIX ASPHALT, 12.5 MM BASE	T			
409.15	BITUMINOUS TACK COAT, APPLIED	G			
502.342	STRUCTURAL CONCRETE ROADWAY TRUCK APRON	CY			
508.13	SHEET WATERPROOFING MEMBRANE	SY			
603.159	12-INCH CULVERT PIPE OPTION III	LF			
603.17	18-INCH CULVERT PIPE OPTION I - ***Note:*** *Option I is used under driveways*	LF			
603.179	18-INCH CULVERT PIPE OPTION III	LF			
603.19	24-INCH CULVERT PIPE OPTION I - ***Note:*** *Under driveways*	LF			
603.199	24-INCH CULVERT PIPE OPTION III	LF			
603.20	30-INCH CULVERT PIPE OPTION I - ***Note:*** *Under driveways*	LF			
603.209	30-INCH CULVERT PIPE OPTION III	LF			
603.21	36-INCH CULVERT PIPE OPTION I - ***Note:*** *Under driveways*	LF			
603.219	36-INCH CULVERT PIPE OPTION III	LF			
603.41	24-INCH REINFORCED CONCRETE PIPE CLASS IV	LF			
603.42	30-INCH REINFORCED CONCRETE PIPE CLASS IV	LF			
603.43	36-INCH REINFORCED CONCRETE PIPE CLASS IV	LF			
603.55	CONCRETE PIPE TIES	GP			
604.072	CATCH BASIN TYPE A1-C – ***Note:*** *Use Type A with granite curb*	EA			
604.092	CATCH BASIN TYPE B1-C – ***Note:*** *Use Type B with paved/concrete curb*	EA			

ITEM	ITEM DESCRIPTION	UNIT	QTY.	UNIT PRICE	AMT.
604.16	ALTERING CATCH BASIN TO MANHOLE	EA			
604.18	ADJUSTING MANHOLE OR CATCH BASIN TO GRADE	EA			
604.243	CATCH BASIN TYPE F3-C – ***Note:*** *Type F is small; number is depth from top of frame*	EA			
604.245	CATCH BASIN TYPE F4-C	EA			
604.247	CATCH BASIN TYPE F5-C	EA			
604.249	CATCH BASIN TYPE F6-C	EA			
604.262	CATCH BASIN TYPE B5-C – ***Note:*** *Offet cone with cascade grate*	EA			
605.09	6-INCH UNDERDRAIN TYPE B – ***Note:*** *Holes down*	LF			
605.10	6-INCH UNDERDRAIN OUTLET	LF			
605.11	12-INCH UNDERDRAIN TYPE C – ***Note:*** *Holes up*	LF			
605.111	12-INCH UNDERDRAIN OUTLET	LF			
605.13	18-INCH UNDERDRAIN TYPE C	LF			
605.131	18-INCH UNDERDRAIN OUTLET	LF			
605.15	24-INCH UNDERDRAIN TYPE C	LF			
605.151	24-INCH UNDERDRAIN OUTLET	LF			
606.1301	31-INCH W-BEAM GR, MID-WAY SPLICE - SINGLE FACED	LF			
606.1302	31-INCH W-BEAM GR, MID-WAY SPLICE - DOUBLE FACED	LF			
606.1303	31-INCH W-BEAM GR, MID-WAY SPLICE - UP TO 15-FT RADIUS	LF			
606.1304	31-INCH W-BEAM GR, MID-WAY SPLICE - OVER 15-FT RADIUS	LF			
606.1305	31-INCH W-BEAM GR, MID-WAY SPLICE - SPCL FLARED TERMINAL	LF			
606.1306	31-INCH W-BEAM GR, MID-WAY SPLICE - SPCL TANGENT TERMINAL	LF			
606.353	REFLECTORIZED FLEXIBLE GUARDRAIL MARKER	EA			
606.356	UNDERDRAIN DELINEATOR POST	EA			
606.47	SINGLE WOOD POST	EA			
607.24	REMOVE AND RESET FENCE	LF			
608.26	CURB RAMP DETECTABLE WARNING FIELD	SF			
608.45	CONSTRUCT SIDEWALK	SY			
609.11	VERTICAL CURB TYPE 1 – ***Note:*** *Granite curb*	LF			
609.21	CONCRETE SLIPFORM CURB	LF			
609.219	CONCRETE SLIPFORM CURB - TERMINAL END	LF			
609.221	TERMINAL CURB TYPE 1	LF			
609.31	CURB TYPE 3 – ***Note:*** *Paved curb*	LF			
610.08	PLAIN RIPRAP	CY			
610.180	STONE DITCH PROTECTION	CY			
613.319	EROSION CONTROL BLANKET	SY			
615.07	LOAM	CY			
618.13	SEEDING, METHOD 1 – ***Note*** *: Lawns (Unit = 1,000 square feet.)*	UNIT			
618.14	SEEDING, METHOD 2 – ***Note*** *: Mowable slopes*	UN			
618.141	SEEDING, METHOD 3 – ***Note*** *: Non-mowable areas*	UN			
619.12	MULCH	UN			
620.58	EROSION CONTROL GEOTEXTILE - ***Note:*** *Typically used under riprap*	SY			
626.11	PRECAST CONCRETE JUNCTION BOX	EA			
626.21	METALLIC CONDUIT	LF			
626.22	NON-METALLIC CONDUIT	LF			
626.38	GROUND MOUNTED CABINET FOUNDATION	EA			
626.412	20 INCH DIAMETER FOUNDATION - ***Note:*** *For pedestal pole*	LF			
626.44	36 INCH DIAMETER FOUNDATION	LF			
626.451	42 INCH DIAMETER FOUNDATION	LF			
626.46	48 INCH DIAMETER FOUNDATION	LF			
626.47	54 INCH DIAMETER FOUNDATION	LF			
627.18	12 INCH SOLID WHITE PAVEMENT MARKING	LF			
627.733	4 INCH WHITE OR YELLOW PAINTED PAVEMENT MARKING LINE	LF			
627.75	WHITE OR YELLOW PAVEMENT & CURB MARKING	SF			
629.05	HAND LABOR, STRAIGHT TIME	HR			

ITEM	ITEM DESCRIPTION	UNIT	QTY.	UNIT PRICE	AMT.
631.12	ALL PURPOSE EXCAVATOR (INCLUDING OPERATOR)	HR			
631.13	BULLDOZER (INCLUDING OPERATOR)	HR			
631.140	GRADER (INCLUDING OPERATOR)	HR			
631.172	TRUCK-LARGE (INCLUDING OPERATOR)	HR			
631.18	CHAIN SAW RENTAL (INCLUDING OPERATOR)	HR			
631.20	STUMP CHIPPER RENTAL (INCLUDING OPERATOR)	HR			
631.22	FRONT END LOADER (INCLUDING OPERATOR)	HR			
631.32	CULVERT CLEANER (INCLUDING OPERATOR)	HR			
639.18	FIELD OFFICE TYPE A	EA			
639.19	FIELD OFFICE TYPE B	EA			
643.21	NON-INVASIVE DETECTION - STOP LINE:	LS			
643.22	NON-INVASIVE DETECTION - ADVANCE:	LS			
643.63	RECTANGULAR RAPID FLASHING BEACON	LS			
643.80	TRAFFIC SIGNALS AT:	LS			
643.81	TRAFFIC SIGNAL CONTROL SYSTEM	LS			
643.83	VIDEO DETECTION SYSTEM	LS			
643.92	PEDESTAL POLE	EA			
643.921	PEDESTRIAN BUTTON POLE AND FOUNDATION	EA			
643.94	DUAL PURPOSE POLE	EA			
643.98	COUNTDOWN PEDESTRIAN HEADS	EA			
645.106	DEMOUNT REGULATORY, WARNING, CONF & RTE MARKER SIGN	EA			
645.108	DEMOUNT POLE	EA			
645.116	REINSTALL REGULATORY, WARNING, CONF & RTE MARKER SIGN	EA			
645.118	REINSTALL POLE	EA			
645.292	REGULATORY, WARNING, CONF & RTE MARKER SIGNS TYPE II	SF			
652.312	TYPE III BARRICADE	EA			
652.33	DRUM	EA			
652.34	CONE	EA			
652.35	CONSTRUCTION SIGNS	SF			
652.36	MAINTENANCE OF TRAFFIC CONTROL DEVICES	CD			
652.38	FLAGGER	HR			
652.381	TRAFFIC OFFICER	HR			
652.41	PORTABLE CHANGEABLE MESSAGE SIGN	EA			
656.75	TEMPORARY SOIL EROSION & WATER POLLUTION CONTROL	LS			
658.20	ACRYLIC LATEX COLOR FINISH - ***Note:*** *Traffic islands*	SY			
659.10	MOBILIZATION	LS			
803.01	TEST PITS	EA			
812.06	SEWER MANHOLE	EA			
812.16	ADJUSTING MANHOLE TO GRADE	EA			
				TOTAL	$-

END OF CHAPTER 3