280 Tolling Governance and Processes

280.1 General

This chapter establishes the governance, coordination requirements, and processes applicable to toll facilities.

Toll facilities design criteria [formerly housed in the FDOT General Tolling Requirements (GTR)] have been integrated into the ***FDM*** and related discipline manuals. Toll facilities projects require coordination across multiple FDOT manuals, including the ***Structures Manual***, ***Geotechnical Design Manual***, ***Flexible Pavement Design Manual (FPDM)***, ***Rigid Pavement Design Manual (RPDM)***, ***Construction Project Administration Manual (CPAM)***, and ***Standard Plans***.

FDM 280 through ***FDM 286*** and ***FDM 947*** comprise the tolling design and plans preparation chapters of the ***FDM***. These chapters establish roadway, site, structural, electrical, and communications design requirements necessary to support tolling infrastructure. Use these chapters together as an integrated set of toll facilities design requirements.

280.2 Tolling Abbreviations

The following is a list of the commonly used abbreviations:

AASHTO	**American Association of State, Highway, and Transportation Officials**
ADA	**Americans with Disabilities Act**
AET	**All Electronic Tolling**
AHU	**Air Handling Unit**
AIA	**American Institute of Architects**
AOR	**Architect of Record**
APE	**Average Pavement Elevation**
ATC	**Alternative Technical Concept**
AVI	**Automatic Vehicle Identification (including associated infrastructure)**
BCA	**Building Code Administrator**
BCU	**Battery Charging Unit**
CCTV	**Closed-Circuit Television**

CEI	**Construction Engineering and Inspection Professional**
CSI	**Construction Specifications Institute**
CU	**Condensing Unit**
DBPR	**Florida Department of Business and Professional Regulation**
DVAS	**Digital Video Auditing System**
EL	**Express Lane**
EOR	**Engineer of Record**
EPA	**Environmental Protection Agency**
FBC	**Florida Building Code**
FDOT	**Florida Department of Transportation (Department)**
FDP	**Fiber Distribution Panel**
FE	**Fire Extinguisher**
FOC	**Fiber Optic Cable**
GUL	**General Use Lane**
HOV	**High Occupancy Vehicle**
ITS	**Intelligent Transportation Systems**
HDPE	**High Density Polyethylene**
KML	**Keyhole Markup Language**
KMZ	**Compressed version of KML file**
LRFD	**Load and Resistance Factor Design**
LRFDLTS	**LRFD Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals**
MOC	**Maintenance of Communications**
MSE	**Mechanically Stabilized Earth**
MSP	**Modified Special Provision**
NEC	**National Electric Code**
NEMA	**National Electrical Manufacturers Association**
NESHAP	**National Emissions Standard for Hazardous Air Pollutants**
NOA	**Notice of Acceptance**
NRTL	**Nationally Recognized Testing Laboratory**

OCC	**Outdoor Communications Cabinet**
OPUS	**Optical Profile Unifying System**
ORT	**Open Road Tolling**
OSHA	**Occupational Safety and Health Administration**
PD&E	**Project Development and Environment**
PCMS	**Portable Changeable Message Sign**
RFP	**Request for Proposal**
RTC	**Roadside Tolling Cabinet**
SBS	**Styrene-Butadiene-Styrene**
SCADA	**Supervisory Control and Data Acquisition**
SMFOC	**Single Mode Fiber Optic Cable**
SPD	**Surge Protection Device**
TEB	**Toll Equipment Building**
TEC	**Toll Equipment Contractor**
TL	**Tolled Lane**
TSP	**Technical Special Provision**
TSTM	**Toll Siting Technical Memorandum**
TTCP	**Temporary Traffic Control Plans**
UL	**Underwriter's Laboratory**
UPS	**Uninterruptible Power Supply**
VAC	**Voltage – Alternating Current**
VCAR	**Vehicle Capture and Recognition**
VDC	**Voltage – Direct Current**
VDAC	**Vehicle Detection and Classification**

280.2.1 Tolling Series Organization

The ***FDM*** includes a series of toll-specific chapters that collectively establish the Department's requirements for the planning, design, permitting, and plans production of toll facilities infrastructure. These chapters function together as an integrated framework for toll facilities development.

The tolling series within the ***FDM*** is organized as follows:

- ***FDM 280 (Tolling Governance and Processes)*** – Establishes program governance, Toll Siting Technical Memorandum (TSTM) requirements, coordination with Turnpike Tolls Design, and guidance related to toll-specific technical and modified special provisions.
- ***FDM 281 (Toll Site Roadway)*** – Defines roadway design requirements within toll site limits.
- ***FDM 282 (Toll Site Design and Layout)*** – Establishes toll site equipment layout, maintenance access, electrical, lighting protection, and cable distance limitations.
- ***FDM 283 (Toll Equipment Buildings)*** – Defines requirements for toll equipment buildings, utility service, and associated site infrastructure.
- ***FDM 284 (Toll Gantries)*** – Provides design requirements for toll gantry structures and associated components.
- ***FDM 285 (Toll Communications)*** – Defines communications infrastructure supporting toll systems and integration with roadway communications networks.
- ***FDM 286 (Toll Building Permits)*** – Provides permitting requirements applicable to toll site structures and equipment buildings.
- ***FDM 947 (Toll Facilities Plans)*** – Establishes toll facilities plan composition, sheet requirements, and toll component plan sets.

280.3 Tolling Definitions

The following is a list of terms with their definitions or explanation of the context in which they are used.

(1) **Architect of Record (AOR):** The architect registered in the State of Florida that applies the criteria for the project, performs the analysis, designs the project, and is responsible for the preparation of plans and specifications. The AOR for design must not be employed as the Contractor's AOR.

(2) **Average Pavement Elevation (APE):** The average of the worst-case highest and the worst-case lowest pavement elevations within the toll loop pavement area for all travel directions and shoulders under a single span, measured along the centerline of the gantry, for all interim conditions and the ultimate condition.

(3) **Buffer:** Space between an express lane and general use lanes or toll lanes. See ***FDM 211.3.3*** for managed lane separation treatment types.

(4) **Equipped Lane(s)/Shoulder(s):** Lanes or shoulders at a toll site with gantry-mounted equipment overhead.

(5) **Express Lane (EL):** A travel lane which is delineated or physically separated from a general use lane within a roadway corridor in which tolls are set based on traffic conditions. See ***FDM 102.2*** and ***FDM 211*** for additional information on ELs.

(6) **Fiber Optic (FO) Backbone:** Fiber optic trunk line supporting communications pathways (typically 96 or 144 strand single mode fiber), running along the roadway in either or both directions (northbound / southbound or eastbound / westbound) that is owned by the Department and / or tolling agency.

(7) **Florida's Turnpike Enterprise (Turnpike):** A part of the FDOT that governs the design of the Department's toll roads in Florida.

(8) **General Use Lane (GUL):** Un-tolled roadway lanes.

(9) **Leased Circuit Digital Communications Lines:** High-speed digital communication line from the local incumbent telephone/data communications provider (Telco) to the toll equipment building or outdoor communications cabinet.

(10) **Outdoor Communications Cabinet (OCC):** Communications cabinet that houses the roadside tolling cabinet toll site's SCADA, communications, network video recorder, and uninterruptible power supplies.

(11) **Power Distribution Frame:** Electrical power equipment and panel assembly that distributes power to the toll sites without a toll equipment building.

(12) **Roadside Tolling Cabinet (RTC):** Cabinet that houses the toll equipment for toll sites without a toll equipment building.

(13) **Toll Equipment Building (TEB):** A free-standing building that houses electronic equipment associated with toll collection from one or more toll gantries.

(14) **Toll Equipment Contractor (TEC):** The TEC is a tolling vendor currently under contract with the Turnpike to furnish and install the toll system.

(15) **Toll Equipment Working Space:** Each instance (cabinet, backplane, etc.) of tolling equipment installed by the TEC within the TEB or RTC.

(16) **Toll Gantry:** Truss structure supporting the toll equipment over the roadway.

(17) **Toll Header Curb:** Load bearing concrete installed adjacent to the concrete barrier for the full length of the toll loop pavement as shown in ***Exhibits 282-35*** and **282-37**.

(18) **Toll Infrastructure:** The gantry, building, portion of the roadway, and any other components that support the toll system.

(19) **Toll Lane (TL):** Tolled roadway lanes for which tolls are constant and not set based on traffic conditions. This area includes the toll detection zone and associated pavement infrastructure.

(20) **Toll Loop Pavement Area:** Pavement that is centered under the gantry that covers all tolled lanes, shoulders adjacent to tolled lanes, buffers, and lanes adjacent to buffers as identified in ***FDM 281***.

(21) **Toll Loop(s):** In-pavement inductive system used to detect and count the vehicle's axles in the toll loop pavement area.

(22) **Toll Site Envelope:** The area defined as the boundary surrounding the toll site as shown in the exhibits of ***FDM 282***.

(23) **Toll Site/Toll Facility:** All toll infrastructure required to support one or more tolling movements at a unique location.

(24) **Toll Site in Production:** A toll site that is actively processing tolling transactions and transmitting them to the tolls data center.

(25) **Toll Site Plan Nomenclature for TEB and/or RTC sites**:

(a) **Standard Toll Site Plan**: Gantry upright and toll loop pavement are within or adjacent to the site layout limits housing the TEB or RTC cabinets. See ***Exhibit 282-1***, ***Exhibit 282-2***, and ***Exhibit 282-5*** for examples of Standard Site Plans.

(b) **Detached Toll Site Plan:** Gantry upright is within the site layout limits housing the TEB or RTC cabinets. The detached toll loop pavement area is located in the median or on the side of the roadway opposite the site layout limits housing the TEB or RTC cabinets. See ***Exhibit 282-3***, ***Exhibit 282-4***, and ***Exhibit 282-7*** for examples of Detached Site Plans.

(c) **Remote Toll Site Plan:** Gantry upright and toll loop pavement area are located in the median or on the side of the roadway opposite the site layout limits housing the TEB or RTC cabinets. See ***Exhibits 282-27*** through ***282-32*** for examples of Remote Site Plans.

(26) **Toll System:** The equipment required to collect toll revenue. This includes the equipment installed on the gantry, in the building, toll loops, and all equipment wiring furnished and installed by the TEC.

(27) **Tolling Movement:** A separately tolled direction of travel at a single toll site.

(28) **Tolls Fiber-Optic Lateral:** Fiber optic connection between the toll equipment building and the FO backbone with associated conduit.

(29) See the ***Standard Specifications*** for additional definitions (e.g. contractor, engineer, engineer of record, etc.).

280.4 Toll Coordination Screening

During project scoping and early design development, evaluate whether the project may affect existing or proposed toll infrastructure, toll system operations, or managed lane operations.

If any of the following conditions apply, coordinate with Turnpike Tolls Design to determine the required scope, level of effort, and design support requirements. Coordination may include development of scope of services elements, staff-hour estimates, or requests for proposal (RFP) support.

Evaluate the following potential impacts to toll infrastructure or operations:

- Toll facilities presence within the project limits:
    - A proposed toll site is located within the project limits.
    - An existing toll site is located within the project limits.
    - Managed lanes (e.g., express lanes or through lanes) are located within the project limits.
    - A future toll site is planned within the project limits as part of the ultimate corridor configuration.
- Roadway improvements that may affect an existing toll site, including but not limited to:
    - Lane or shoulder configuration changes (cross slope, lane width, shoulder width, or pavement elevations)
    - Toll detection infrastructure such as loop conduit or loop pull boxes
    - Toll header curb elements
    - Guardrail or barrier replacement or modification
    - Milling and resurfacing
    - Pavement reconstruction
    - Restriping or water blasting
- Temporary Traffic Control (TTC) phases occurring within the limits of an existing or proposed toll site.
- Drainage or utility adjustments within approximately 200 feet of an existing toll site, including but not limited to:
    - Stormwater infrastructure
    - Roadway lighting conductors
    - ITS devices or conduit
    - Overhead or underground power service
- Projects adjacent to existing toll sites where infrastructure or operations could be affected, including but not limited to:
    - Roadway improvements
    - Drainage modifications
    - Sign structures

- Traffic or toll operations
- Retaining walls
- Primary power service routing
- Communications infrastructure (fiber optic lateral or backbone)
- Existing or proposed cellular towers
- Detection system infrastructure such as wrong-way vehicle detection systems or over-height vehicle detection systems
- Connected vehicle infrastructure, equipment, or operations

When toll facilities impacts are identified, incorporate the results of this coordination into the Toll Siting Technical Memorandum (TSTM) in accordance with ***FDM 280.10***.

280.5 Requirements and Governing Documents

280.5.1 General Requirements

The ***FDM 280 Series*** contains infrastructure requirements for new toll facilities. It also includes requirements for maintaining toll operations at existing toll sites during construction.

The ***FDM*** alone may not contain all toll infrastructure requirements necessary for the installation and testing of a fully functional tolling system. For additional requirements, directly or indirectly related to tolling, refer to the following:

(1) ***Scope of Services*** for Consulting Engineering Services

Modification for Non-Conventional Projects:
Replace item above with the following: (1) Request for Proposal (RFP)

(2) FDOT ***Standard Plans***

(3) FDOT ***Structures Manual***

(4) FDOT ***Drainage Manual***

(5) FDOT ***Geotechnical Design Manual (GDM)***

(6) FDOT ***Traffic Engineering Manual (TEM)***

(7) FDOT ***Design Bulletins and Update Memos***

(8) FDOT ***Basis of Estimates Manual***

Modification for Non-Conventional Projects:
Delete Item (8) above.

(9) FDOT ***CADD Manual***

(10) ***AASHTO LRFD Bridge Design Specifications***

(11) ***LRFD Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals (LRFDLTS)***

(12) ***AISC Steel Construction Manual***

(13) ***Aluminum Association Design Manual Specifications and Guidelines for Aluminum Structures***

(14) ***ACI Building Code Requirements for Reinforced Concrete***

(15) ***AWS Structural Welding Code***

(16) ***Florida Building Code (FBC)***

(17) ***Florida's Fire Prevention Code***

(18) ***Institute of Electrical and Electronics Engineers (IEEE) Standards***

280.5.1.1 Plans and Designs

All plans and designs must be prepared according to the criteria contained in the ***FDM***. In case of discrepancy between the ***FDM*** and other sources of tolling related requirements:

(1) If the criteria herein conflicts with applicable federal, state, or FDOT codes, criteria, and standards, the more stringent requirement governs.

(2) Coordinate with Turnpike Tolls Design to resolve all conflicts that would impact the project's schedule, budget, and quality.

280.5.2 Responsibilities

280.5.2.1 Department

The Department's responsibilities are listed below:

(1) Issues a scope of services.

Modification for Non-Conventional Projects:
Replace item above with the following: (1) Issues the RFP.

(2) Turnpike retains the authority to review any items directly or indirectly related to tolling.

280.5.2.2 AOR/EOR

The AOR's/EOR's responsibilities are listed below:

(1) Prepare contract plans and supporting documents to furnish and install the toll infrastructure to support TEC systems.

(2) Prepare and submit contract documents for building permit review and approval. Refer to ***FDM 286*** for additional information and requirements regarding building permits and State Fire Marshal requirements.

(3) Inter-discipline coordination to accommodate the toll site infrastructure (roadway typical section(s), gantry structures, toll site signing, etc.).

280.5.2.3 TEC

The Department's TEC is responsible for furnishing, installing, commissioning and testing TEC systems including:

(1) Toll equipment

(2) Toll equipment cabling

(3) RTC(s)

(4) Toll loops

280.6 Standard Letters and Templates

This section identifies standard letters and templates that can be obtained from:

https://floridasturnpike.com/business-opportunities/design/tolls-design/

(1) Tolling Deviation Submittal Memorandum (***Form 122-C***)

(2) TSTM Template

280.7 Plan Development Process

280.7.1 Engineering Design Process

FDM 110 through ***112*** discuss the plan development process.

All toll projects require the development of a TSTM prior to the start of the plan development process. See ***FDM 280.10.3*** for details regarding the TSTM.

280.7.2 Process for Use of RTC Sites

(1) RTC sites and associated criteria must not be used without Turnpike Design Engineer approval. See ***FDM 280.8*** for more information on Toll Site categories. For express lane projects, District TSM&O Engineer must submit RTC request(s) to FTE during PD&E.

(2) RTC site use requests must be submitted during PD&E prior to the draft submittal of the preliminary TSTM.

Modification for Non-Conventional Projects:
Delete items (1) and (2) above and replace with the following: RTC sites and applicable requirements must not be used. Use TEB site design criteria for all toll sites.

280.7.3 Toll Site Pre-Design Meeting

The toll site pre-design meeting occurs within two weeks after the EOR/AOR receives notice to proceed with the design which must be attended by the Turnpike's and FDOT's Project Managers and key staff together with EOR's design team (toll site, building, gantry, roadway, drainage, lighting, ITS, utilities, etc.). The District TSM&O Engineer must be included as an attendee for EL projects. The items to be discussed include:

(1) Site visit – At the Turnpike's Project Manager's discretion, a site visit is conducted to review critical items that must be addressed during the plans development process.

(2) Project schedule – Milestone dates for the project are discussed, including how they relate to the Tolls-specific deliverables and permitting described in ***FDM 286.***

(3) Scope clarification – The EOR/AOR responsibilities are discussed.

(4) All known, approved, or under review Tolling Deviations.

280.8 Toll Site Categorization

Toll sites are categorized as follows:

(1) **TEB Site**: Toll site which includes a TEB that houses electronic equipment associated with toll collection from one or more toll gantries.

(2) **RTC Site**: Toll site without a TEB, including infrastructure for RTC(s) to support toll collection from one or more toll gantries.

See ***FDM 280.7.2*** for use of RTC toll sites.

A typical component plan set for a toll site with a TEB includes the site, toll equipment building, and toll gantry subcomponents. A typical component plan set for a toll site with an RTC includes the site and toll gantry subcomponents.

The RTC is furnished and installed by the Department's TEC and therefore does not require its own subcomponent plans. The infrastructure for the RTC is incorporated into the toll site subcomponent.

280.8.1 Toll Site Subcomponents

A typical toll site includes toll pavement, roadside elements (barrier, guardrail etc.), sidewalk, equipment foundation slabs, access driveway, and electrical infrastructure for the site including connections between toll site, gantry and the TEB or RTC(s).

The toll site subcomponent set includes the following disciplines:

(1) Civil
(2) Structural
(3) Geotechnical
(4) Electrical

280.8.2 Toll Equipment Building (TEB)

The TEB subcomponent set includes the following disciplines:

(1) Architectural
(2) Structural
(3) Mechanical with associated plumbing
(4) Electrical

280.8.3 Toll Gantry

The Toll Gantry subcomponent set includes the following disciplines:

(1) Structural
(2) Geotechnical
(3) Electrical

280.9 Design Criteria

280.9.1 Toll Site Design Requirements

(1) Provide a complete toll site design that conforms to the ***FDM*** and the criteria provided in the exhibits. Project-specific adaptation of each exhibit's criteria is required for a complete design.

(2) Each toll site must be designed for all interim and ultimate roadway configurations for the following:

  (a) Lane widths, shoulders, buffers, profiles, and cross sections within the toll loop pavement area.

  (b) Gantry mounted toll equipment layout(s).

(3) The ***FDM*** must not be referenced in plan notes or specification language. Plan notes must not conflict with or duplicate standard language in ***Standard Plans*** or ***Standard Specifications***.

(4) The ***FDM*** alone does not contain all requirements for a toll site. See ***FDM 280.5.1*** for additional information resources.

(5) Coordinate with Roadway Design to confirm toll site environmental impacts are included appropriately in the project environmental assessments at each Phase submittal.

280.9.2 UL Requirements

Infrastructure used at a toll site must be listed by UL or otherwise approved by the United States Department of Labor, under the requirements of ***29 CFR 1910.7***.

280.10 Toll Siting

280.10.1 Introduction

Many critical elements must be evaluated to identify a prospective toll site location that satisfies the design criteria as described herein. Given the numerous elements to consider, a detailed investigation is required for the selection of the proposed site. This study is documented in the Toll Siting Technical Memorandum (TSTM). Deviations from toll facilities design criteria (aka Tolling Deviations) require approval by the Turnpike Design Engineer (see ***FDM 122***).

280.10.2 PD&E Toll Siting

During alternatives development, as part of the PD&E, a sketch level toll site must be included in each alternative. Sketch level toll sites must apply the appropriate toll site exhibit onto each concept alternative to confirm the basic geometry. The concept plans must have sufficient detail to show that the proposed location can support a viable toll site. They must also illustrate potential infrastructure conflicts that must be mitigated.

Perform the following for sketch level toll site development:

(1) Assume a separate toll site for each toll gantry during alternatives development.

(2) Use a TEB site as a sketch for alternatives development.

(3) Coordinate with Turnpike Tolls Design where a TEB site layout is not feasible.

(4) Identify and include justification for any required Tolling Deviations.

(5) Coordinate with Turnpike Tolls Design and Turnpike Tolls Maintenance for mainline gantry type.

A preliminary TSTM must be prepared for the preferred alternative in accordance with ***FDM 280.10.3***.

280.10.3 Toll Siting Technical Memorandum

(1) Provide an evaluation of each specific toll site compared to each of the siting requirements for all interim and ultimate conditions based on the TSTM template identified in ***FDM 280.6***. Summarize the findings of the site analysis and provide recommendations regarding the acceptability of each site and why other sites were not selected. Include the station and milepost values of each recommended toll site location and Turnpike mile marker (MM) values for Turnpike projects.

(2) Identify the probable source for primary power (point of presence) and provide a figure showing the routing to the recommended toll site.

(3) Describe the urban/rural classification and commercial/residential land use around the proposed toll sites. Provide a figure showing the aerial view of the toll site location with the 200-foot radius and the 500-foot radius surrounding the proposed toll site envelope. These circled areas identify criteria as described in ***FDM 282.1.3*** and ***FDM 282.1.4*** respectively.

(4) Provide “to-scale” interim and ultimate Express Lane Diagrams for the corridor in projects that have existing and/or new Express Lanes.

(5) Include an analysis of the impacts of correcting any substandard conditions at each recommended site, and if correcting the impact is not feasible, then identify the

Tolling Deviations needed for each site. See ***FDM 122*** for details regarding the request for Tolling Deviations.

(6) Include the analysis of criteria other than those set forth in the ***FDM*** for locating toll sites. Examples include criteria associated with ponds, environmental permitting, roadway, suitability of soils for foundations, TTC, constructability, right-of-way constraints, utility constraints (e.g., high pressure gas transmission lines, electric transmission systems), Federal Aviation Administration requirements, and availability of communications to the site.

(7) Analyze each toll site design to identify possible maneuvers that may be available to vehicles attempting to avoid toll payment. Provide methods to discourage evasive maneuvers, such as earth berms, landscape, fencing, bollards, barriers, and/or guardrail.

(8) The final TSTM must be signed and sealed.

(9) The toll site location(s) in the final TSTM must be incorporated into the construction documents. A toll site re-analysis is required for any revised site locations. Request approval from the Turnpike Design Engineer if toll site relocation is needed after the final TSTM.

Modification for Non-Conventional Projects:
Replace Item (9) above with the following: (9) During the ATC process, revise the RFP TSTM to include any ATC modifications that directly or indirectly impact existing or proposed toll sites. A revised TSTM is not required if toll sites are not impacted through the ATC process. (10) After notice to proceed: (a) Sign and seal TSTM revisions previously approved during the ATC modifications process. (b) Request approval from the Turnpike Design Engineer if toll site relocation is needed. (11) The toll site location(s) in the RFP including all approved ATC modifications must be incorporated into the construction documents.

280.11 Special Provisions for Tolling

280.11.1 Technical Special Provisions (TSPs)

The Turnpike has coordinated with FDOT Central Office (Specifications and Estimates) regarding the approach related to the tolls facilities TSP(s). The ***Standard Specifications*** do not address all requirements, components, and systems associated with toll sites. Therefore, specific individual TSPs or TSP sections are required for toll facilities.

280.11.1.1 General Requirements

The TSPs for toll site work discussed in this section address specific needs, components, and systems required for toll sites. The final, signed and sealed TSPs must meet the criteria set forth in the ***FDM 280*** Series.

TSP Packages that are applicable to both TEB and RTC Tolls Sites are included in the Toll Facilities TSP Library as follows:

(1) For projects that include both TEB and RTC toll sites, the Gantry/Site, TEB, and RTC Packages are required.

(2) For projects that include only TEB toll sites, the Gantry/Site and TEB Packages are required.

(3) For projects that include only RTC toll sites, the Gantry/Site and RTC Packages are required.

(4) The TSP and TSP sections for products used in toll site construction are classified into one of the following three levels:

  (a) Level 1: The TSP section describes products based on performance and does not list manufacturers.

  (b) Level 2: The TSPs or TSP sections identified as Level 2 include complex products or equipment (not easily defined, has many parts or components, or performance is not easily described, etc.). The TSPs or TSP sections are both prescriptive (includes manufacturer's names) and performance based which must include three or more manufacturers with an "or approved equal" statement. Two manufacturers are permitted for products or equipment that are not readily available.

  (c) Level 3: The TSPs or TSP sections identified as Level 3 include sole sourced products that are required. The TSPs or TSP sections include

specific products or equipment. The AOR/EOR must obtain approval for each Level 3 specification per ***FDM 110.4.1***.

280.11.1.2 Development of AASHTO Formatted TSPs for All Toll Sites

The AASHTO formatted TSPs in the Gantry/Site Package typically include:

(1) Fiber Reinforced Concrete for Toll Loop Pavement

(2) Toll Site Foundations and Equipment Slabs

(3) Bollards (Permanent / Removable)

(4) Accessible Gantry Gear Boxes

(5) Toll Gantries (Non-Accessible/Accessible)

(6) Cable Trays for Toll Gantries

(7) Surface Raceways and Wire Troughs at Toll Gantries

280.11.1.3 TSP Sections Development for TEB Sites

(1) The TSP for TEB includes multiple sections for toll site construction.

(2) The TSP sections in the TEB Package must meet the following criteria:

  (a) The TSP sections must follow the CSI Masterformat®/AIA MASTERSPEC® format.

  (b) A cover and table of contents must be provided for the toll facilities TSP package.

(3) Guidance for AIA Format Technical Special Provision Sections in the TEB Package:

  (a) Some TSP sections include guidance for usage in hidden text.

  (b) Contains criteria for construction of toll sites. The EOR and the AOR must include all necessary project specific TSP sections in the contract documents. TSP sections must be modified to meet current code requirements prior to signing, sealing or releasing for construction.

  (c) See ***FDM 947.8*** for additional requirements.

280.11.1.4 TSP for Roadside Tolling Cabinet Sites

The AASHTO formatted TSPs in the RTC Package typically include:

(1) Acceptance Procedures for Toll Facilities at RTC Toll Sites
(2) Dry Well and Accessories at RTC Toll Sites
(3) Fire Extinguishers and Accessories at RTC Toll Sites
(4) General Requirements for Toll Facilities Electrical Infrastructure at RTC Toll Sites
(5) Low Voltage Electrical Cables and Power Conductors at RTC Toll Sites
(6) Grounding and Bonding for Electrical Systems at RTC Toll Sites
(7) Hangers and Supports for Electrical Systems at RTC Toll Sites
(8) Identification For Electrical Systems at RTC Toll Sites
(9) Lightning Protection System at RTC Toll Sites
(10) Emergency Generator at RTC Toll Sites
(11) Electricity Metering and Utility Service Entrance at RTC Toll Sites
(12) Panelboards at RTC Toll Sites
(13) Wiring Devices at RTC Toll Sites
(14) Automatic Transfer Switch at RTC Toll Sites
(15) Surge-Protective Devices, 1kv or Less at RTC Toll Sites
(16) Lighting Fixtures and Lamps at RTC Toll Sites
(17) Static Uninterruptible Power Supply Systems for Outdoor Communication Cabinets at RTC Toll Sites
(18) SCADA System at RTC Toll Sites
(19) Outdoor Communications Cabinet at RTC Toll Sites

280.11.2 Modified Special Provisions (MSPs)

Modified Special Provisions (MSPs) are required to address the specific needs of toll sites. The latest updated standard specification language must be requested from the Specifications and Estimates Office for each section to be modified.

Sample MSPs have been developed for various standard specification sections. These samples are available upon request from Turnpike Tolls Design and must be modified to

meet the latest standard specification language and project-specific requirements prior to signing, sealing or releasing for construction.

280.11.2.1 MSPs for Toll Site Construction

MSPs required for projects with proposed toll sites or impacts to existing toll site infrastructure include the following as applicable:

(1) Toll Site Construction Scheduling

(2) Toll Site Construction TTC

(3) Express Lanes Construction Scheduling

(4) Express Lanes Temporary TTC

(5) Express lanes “End-to-End Testing”

280.11.2.2 MSPs for Projects with Toll Sites within Project Limits

MSPs are required for projects with toll sites within project limits where no work is anticipated at the existing toll sites. Include the following MSPs as applicable for TTC within toll site limits:

(1) Toll Site Construction Scheduling

(2) Toll Site Construction TTC