Texas Department of Transportation

BOOK 2 – TECHNICAL PROVISIONS

FOR

LOOP 375 - BORDER HIGHWAY WEST EXTENSION

PROJECT

Design-Build Project

ATTACHMENT 21-1
TOLL SYSTEMS RESPONSIBILITIES MATRIX

DECEMBER 20, 2013

BHW Toll Responsibility Matrix – 10/25/2013

Texas Department of Transportation **Toll Systems Responsibility Matrix**

LEGEND		Work Description		
Primary Responsibility	A	**1**	**2**	**3**
Support Responsibility	B	Design	Procure	Install and/or Construct
Coordination Responsibility Only	C			
No Responsibility	D			

Element/Task/Component/ Sub-system	TxDOT (TOD) (T)			Developer (D)			System Integrator (SI)			Comments Other Responsibility/Information
	1	**2**	**3**	**1**	**2**	**3**	**1**	**2**	**3**	
FACILITIES										
Toll Zone Layout	A	D	C	B	A	A	B	A	A	Elements of the layout will be constructed by either D or SI as identified in the layout
Metered power service to roadside equipment cabinet	C	D	C	A	A	A	B	D	C	SI to provide T power requirements and special requirement for construction of utilities near toll collection point.
Electrical conductors from Equip Pad to Toll Zone Equipment	A	D	C	C	D	D	B	A	A	
Complete backup power systems: generators, automatic transfer switches, and fuel tanks	A	D	C	D	D	D	B	A	A	
Uninterruptible Power Supplies for the lane controllers/Tolling Equipment at Toll Sites	C	D	C	D	D	C	A	A	A	
Lightning Protection & Grounding	B	D	C	A	A	A	B	D	C	
Concrete Duct Bank (Toll Zones)	C	D	C	A	A	A	B	D	C	D to provide fiber in a dedicated vault separate from ITS on opposite

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										sides of roadway. Duct banks and fiber shall extend to TxDOT El Paso District Office.
Fiber Optic cables in Duct Bank for Toll Systems	C	D	C	A	A	A	B	D	C	D to provide 72-strand fiber with 4 strands single mode dedicated fiber to each toll zone. No daisy chaining.
Fiber Optic Data/ Communication to ground box near roadside equipment cabinet	C	D	C	A	A	A	B	D	C	D to provide fiber, in accordance with SI specs, to ground boxes adjacent to each toll zone equipment cabinet pad
Data/Communication wire/fiber from ground box near roadside equipment cabinet to toll systems equipment	A	D	C	D	D	C	B	A	A	
Installation/Electrical Design and Plans to junction box near roadside equipment cabinet	A	D	C	C	A	A	B	D	D	D will install to electrical junction box adjacent to roadside equipment cabinet.
Installation/Electrical Design and Plans from junction box near roadside equipment cabinet to toll systems equipment	A	D	C	C	D	C	B	A	A	SI will install from electrical junction box to gantries.
Toll Zone pavement and structure, using special GFRP section and conduit stub ups for pavement sensors	B	D	C	A	A	A	B	D	C	SI to provide pavement loop details with stub-up locations. Stub Ups to terminate in junction boxes adjacent to toll zone pavement not on structure
Concrete Barrier Installation	B	D	C	A	A	A	D	D	C	D to provide Concrete Barrier as per Toll Plaza Layout. Barrier openings will accommodate maintenance driveways.
Pavement sensors	B	D	C	D	D	C	A	A	A	D to provide access to SI to saw cut

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										and install pavement sensors
Gantries and foundations	B	D	C	A	A	A	B	D	C	T to provide SI specs to Dfor gantry design. D to coordinate locations with T
Toll Equipment mounts on Gantries	A	D	C	D	D	C	B	A	A	SI to install any required equipment mounts on gantries. SI to coordinate with T during the design phase to incorporate any req'd framing to support equipment mounts.
Concrete Pads for power, elec, roadside toll equip, generator, LP tank	A	D	C	C	D	C	B	A	A	D to provide grading, earthwork, and drainage. SI to provide pads for equip cabinets, generator, and fuel source.
Roadside equipment cabinets (including HVAC systems)	C	D	C	D	D	C	A	A	A	SI to install complete
Toll Signage	B	D	D	A	A	A	D	D	D	
Maintenance Driveway (including all roadway items within the toll zones)	A	D	C	C	A	A	B	D	C	D to provide maintenance access driveway w' a min of 6" flex base and 3"HMA
ELECTRONIC TOLL COLLECTION SUB-SYSTEMS (ETC)										
Automatic Vehicle Classification System and Image Capturing System (ICS) Hardware	C	D	C	D	D	C	A	A	A	D will coordinate access to roadway for installations.
Computer rack system, routers, hubs, switches, firewalls, VPN, modems, patch/distribution panels,	C	D	C	D	D	C	A	A	A	D will coordinate access to roadway for installations.

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Toll Plaza Host Computer	C	D	C	D	D	D	A	A	A	
Support equipment at TxDOT Designated Customer Service Center	C	D	C	D	D	D	A	A	A	
Commissioning and Operational Testing	C	D	C	D	D	C	A	A	A	
Lane controller software	C	D	C	D	D	D	A	A	A	
Plaza Computer Software	C	D	C	D	D	D	A	A	A	
Host Computer Software	C	D	C	D	D	D	A	A	A	
Toll Collection System Application Software	C	D	C	D	D	D	A	A	A	
Maintenance Online Management System Software	C	D	C	D	D	D	A	A	A	
Site Acceptance Test	C	D	C	D	D	C	A	A	A	
Project Acceptance Test	C	D	C	D	D	C	A	A	A	
Training: (User and Maintenance)	C	D	C	D	D	D	A	A	A	
Documentation: (User and Maintenance)	C	D	C	D	D	D	A	A	A	
Documentation: ETS Installation/Electrical Design and Plans	C	D	C	D	D	D	A	A	A	
Documentation: Civil As-built Drawings, and Contract Closeout Documents	C	D	C	D	D	D	A	A	A	
Documentation: ETS As-built Drawings	C	D	C	D	D	D	A	A	A	

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FCC Licenses/Regulations as applies to toll systems	C	D	C	D	D	D	A	A	A	
Lane Controller Hardware	C	D	C	D	D	C	A	A	A	D will coordinate access to roadway for installations
Communication Equipment	C	D	C	D	D	C	A	A	A	D will coordinate access to roadway for installations.