GENERAL MEETING OF THE BOARD OF DIRECTORS
OF THE
CENTRAL TEXAS REGIONAL MOBILITY AUTHORITY

RESOLUTION NO. 12-028

AUTHORIZING A NEW WORK AUTHORIZATION WITH TELVENT USA CORPORATION TO PROVIDE ASSISTANCE WITH A NEW TOLL SYSTEM UNDER THE INTERLOCAL AGREEMENT WITH CAMERON COUNTY REGIONAL MOBILITY AUTHORITY.

WHEREAS, by Resolution No. 10-06, adopted by the Board of Directors on January 27, 2010, the Board authorized an interlocal agreement between the Mobility Authority and the Cameron County Regional Mobility Authority ("CCRMA") by which the Mobility Authority would provide toll system implementation services to CCRMA (the "Toll System Implementation ILA"); and

WHEREAS, the Mobility Authority provides services to CCRMA under the Toll System Implementation ILA through its Contract for Toll System Implementation effective April 27, 2005, with Telvent USA Corporation, formerly known as Caseta Technologies (the "Telvent Contract"); and

WHEREAS, CCRMA has notified the Mobility Authority that it desires assistance from the Mobility Authority under the Toll System Implementation ILA to implement and integrate a new toll system for the its Phase 2 of SH 550 "Port Spur"; and

WHEREAS, the Executive Director recommends approval of the proposed work authorization under the Telvent Contract attached and incorporated into this resolution as Attachment A.

NOW THEREFORE, BE IT RESOLVED that the proposed work authorization is approved; and

BE IT FURTHER RESOLVED that the Executive Director may finalize and execute on behalf of the Mobility Authority the proposed work authorization in the form or substantially the same form attached as Attachment A.

Adopted by the Board of Directors of the Central Texas Regional Mobility Authority on the 25th day of April, 2012.

Submitted and reviewed by:

Andrew Martin
General Counsel for the Central
Texas Regional Mobility Authority

Approved:

Ray A. Wilkerson
Chairman, Board of Directors
Resolution Number: 12-028
Date Passed: 04/25/2012

ATTACHMENT "A" TO RESOLUTION 12-028

NEW WORK AUTHORIZATION

[on the following 20 pages]

CENTRAL TEXAS REGIONAL MOBILITY AUTHORITY

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WORK AUTHORIZATION

WORK AUTHORIZATION NO. 7

TOLL COLLECTION SYSTEMS IMPLEMENTATION-
CAMERON COUNTY RMA SH 550-PORT SPUR TOLL PROJECT

THIS WORK AUTHORIZATION is made pursuant to the terms and conditions of Article 1 of the GENERAL PROVISIONS, Attachment A to that certain Contract for Toll System Implementation, dated April 27, 2005 (the Contract) entered into by and between the Central Texas Regional Mobility Authority (the "Authority" or "CTRMA"), and Telvent USA Corporation (the Contractor), as amended February 26, 2010.

PART I. The Contractor will perform toll system implementation and maintenance services described in **Attachment A** attached hereto. The Contractor's duties and responsibilities to coordinate with the CCRMA's contracted designers and construction contractors is detailed in the Responsibility Matrix attached thereto as **Attachment C**. The INTERLOCAL AGREEMENT, together with Attachments are attached hereto and made a part of this Work Authorization.

PART II. The maximum amount payable under this Work Authorization No. 7 is $1,386,880. This amount is based generally upon the estimated fees set forth in **Attachment B**, which is incorporated herein and made a part of this Work Authorization. In accordance with Paragraph B, Article 1 (Work Authorizations), Attachment A of the Contract, CTRMA and the Contractor agree that the Price Schedule of the Contract is revised to increase the "TOTAL PROPOSED PRICE – All Segments and Common Items" shown on page "Schedule 1-21" of the Contract by an amount not to exceed the $1,386,880 payable under this Work Authorization No. 7.

PART III. Payment to the Contractor for the services established under this Work Authorization shall be made in accordance with Article 12 of the Contract, and Attachment A, Article 1 of the GENERAL PROVISIONS.

PART IV. This Work Authorization is effective April 30, 2012 and shall terminate one year following System Acceptance unless extended by a supplemental Work Authorization as provided in Attachment A, Article 1 of the GENERAL PROVISIONS. The work shall be performed in accordance with the Project Schedule and Milestones as set forth in Attachment G of the INTERLOCAL AGREEMENT, as may be amended.

PART V. This Work Authorization No. 7 does not waive any of the parties' responsibilities and obligations provided under the Contract, and except as specifically modified by this Work Authorization, all such responsibilities and obligations remain in full force and effect.

IN WITNESS WHEREOF, this Work Authorization No. 7 is executed in duplicate counterparts and hereby accepted and acknowledged below.

THE CONTRACTOR: Telvent USA Corporation

Signature Date
Typed/Printed Name and Title

CENTRAL TEXAS REGIONAL MOBILITY AUTHORITY

Executed for and approved by the Central Texas Regional Mobility Authority for the purpose and effect of activating and/or carrying out the orders, established policies or work programs heretofore approved and authorized by the Texas Transportation Commission.

Signature Date
Typed/Printed Name and Title

LIST OF ATTACHMENTS

ATTACHMENT A	SCOPE OF WORK
ATTACHMENT B	FEE PROPOSAL
ATTACHMENT C	RESPONSIBILITY MATRIX
ATTACHMENT D	INTERLOCAL AGREEMENT

CAMERON COUNTY REGIONAL MOBILITY AUTHORITY

TOLL COLLECTION SYSTEMS IMPLEMENTATION

CCRMA SH 550 – Port Spur Toll Project

SCOPE OF WORK for Systems Integrator

A1.0 General

A1.01. Background

The Cameron County Regional Mobility Authority (CCRMA) approved the implementation of the proposed Toll Implementation Plan to construct additional capacity on various segments of highway network in the CCRMA Long-Range Plan as toll road facilities in conjunction with lanes for development of the SH550 tolling route. The toll road segments are in various stages of project development, design or construction by the Cameron County Regional Mobility Authority (CCRMA). It is intended that the proposed segment will be implemented by the CTRMA as part of the CCRMA Toll Road System. A tabulation of ***Detailed Lane Configuration*** for the Toll Collection System (TCS) as currently anticipated for the SH550 – Port Spur Project ("the Project") is included as part of this Exhibit A. The TCS for the SH550 – Port Spur Project will be all Electronic Toll Collection (ETC). The Project is currently open to traffic and will be subject to tolls in 2012.

A1.02. Summary Scope of Work

The Scope of Work for this Work Authorization provides details for the procurement, installation, testing, and implementation of a complete and fully operational TCS for the Project, including all of the required communications and systems interfaces, and one (1) year of toll systems maintenance services. The Work also includes design, coordination, and project interface activities to facilitate the design and construction of the toll system infrastructure facilities by others on the SH550 – Port Spur Project. This Work Authorization also authorizes the Systems Integrator (SI) to establish and maintain relationships with a wide variety of third parties and to coordinate the designs for the proposed TCS with the SH550 – Port Spur Project to ensure that the construction of the toll system infrastructure facilities will be fully compatible and will meet the requirements for CCRMA's TCS. In this role, the SI will work closely with CCRMA, CTRMA, TxDOT, and various designers and roadway contractors in developing the required TCS and network infrastructure.

A2.0 General Description – Toll Road Infrastructure and Site

A2.01. SH550 – Port Spur

Proposed Facility: The improved corridor will include a two- lane Toll Road (Two and One Shoulder Lane in each direction). The Toll Lanes will be separated from the frontage roads by a grassed elevated median and physical barrier.

A3.0 General Description - Toll Collection System Elements

A3.01. General Requirements

The TCS for the CCRMA FM550 – Port Spur, which is being designed and implemented through a series of separate work authorizations for the various segments of the proposed Toll Road System, generally will be fully compatible with the TCS designed and implemented for the original SH550 Toll Road Project, using automatic vehicle identification and classification technology, a Violation Enforcement System (VES) with an integrated camera and triggering system to capture referenced digital images of license plates, and a Remote Online Management System (ROMS). It is required that the System be interoperable with the other Texas ETC systems. The CCRMA contracts with the CTRMA for access to members of the Texas Statewide Interoperability Task force for CSC services for its customers.

Expansion of CCRMA's TCS to serve that SH550 – Port Spur Project includes coordination of appropriate interfaces with the CSC. Appropriate communications links between the existing toll facility on the CCRMA Toll Road System and the VPC are part of the requirements of the design/implementation work. The Violation Processing Center (VPC) is located in a separate facility, and it is being administrated by the Municipal Services Bureau, Inc. under contract to the CCRMA. Development of CCRMA's TCS also will include coordination and design of appropriate interfaces with the VPC. Appropriate communications links between the various toll facilities on the CCRMA Toll Road System and the CSC are part of the requirements of the design/implementation work but monthly recurring fees for services are not.

A revised detailed tabulation of the elements of the TCS, indicating locations and basic components is attached as "***Detailed Lane Configurations***". The general locations and layouts for the toll facilities of the SH550 – Port Spur Project as currently proposed are indicated on the attached schematic diagram. This diagram is based on the latest information currently available and is intended for informational purposes only. The locations are subject to change, and it should be anticipated that refinements and adjustment to the locations and layouts indicated will be required as designs for the TCS are developed further.

A4.0 General Description - Gantries and Roadside Equipment for ETC Systems

For all TCS field installations on the FM550 – Port Spur Project, the SI will be required to provide and install the toll equipment systems and hardware for a complete, tested, and operating

TCS under this Work Authorization. The principle items of work and primary components of the TCS at the Remote Express Toll Location will include, but are not limited to:

- Furnish & Install In-Lane Processor (ILP) enclosure, with HVAC for appropriate environmental protection and climate controls for electronic equipment;
- Master Ground Bus Bar provided by others;
- Furnish & Install Lightning Surge Suppression System & Components for AVI, network, VES, UPS power and service/feeder power;
- Communication System Outside, Inside, and Network Components (i.e.: Fiber Optic Cable, Terminations, Switches, routers and other network devices). Does not include monthly service fees;
- Furnish & Install Express ETC Lane components, including AVDS, AVC, VES, TSI and AVI systems and hardware;
- Furnish & Install all ETC Lane Equipment wiring & cable, hardware, brackets, and fasteners required to attach the ETC equipment to the gantries provided by the Contractor;
- Furnish & Install Uninterruptible Power Supply, including wiring & cable, hardware, and ROMs interface;
- Furnish & Install ROMs monitoring for all ETC site equipment (i.e.: ETC Equipment, AVDS, AVC, AVI, VES, HVAC, power and communications equipment, etc); and
- Provide complete testing and acceptance of all systems for the complete, fully operational TCS, furnished and installed.

The procurement, fabrication and installation of gantries for the TCS to be located on the Project will be by others. It is the responsibility of the designer to establish the precise locations for each of the gantry structures and to provide the Roadway Contractor(s) with detailed information for the installation of the TCS equipment at all locations.

A5.0 Coordination and Project Interface

The work related to this Work Authorization generally will include, but not be limited to:

- Design input and providing detailed information including TCS component details, dimensions and layout configurations, and specific technical requirements for elements of the proposed TCS;
- Preparation of construction/installation guidelines for various components of CCRMA's TCS;
- Review of construction documents prepared by others; and
- Attendance and participation at coordination meetings as determined by project schedule and/or as requested by CCRMA

The SI is to participate is the process for coordination which will enable the contractors and designers on the FM550 – Port Spur Project to obtain specific, detailed information regarding the proposed TCS components in order to complete the design/construction of the appropriate toll facilities infrastructure. The SI will be responsible for maintaining relationships with a wide variety of third parties, including designers, roadway contractors, and various suppliers. In this role, the SI will work closely with CCRMA in developing the required network.

All TCS infrastructure facilities at the remote Express Toll Location on the Project will be provided by others as indicated in ***Section A6.0 and Section A7.0*** hereof. The SI shall fully coordinate the designs for the TCS with others and provide the required details and technical requirements to ensure that the construction of the toll system infrastructure facilities will be fully compatible and meet the requirements for CCRMA's TCS. The SI is responsible for coordinating with others and for providing all necessary details, system requirements, and reviews of construction documents to ensure that the gantries are located and configured properly to accommodate the SI's own particular system components as required to meet CCRMA TCS performance and accuracy requirements.

A6.0 Work by Others

A6.01. Civil/Roadway Construction

CCRMA, through its roadway construction contract will provide for a minimum of 60 linear feet of jointed concrete pavement at the area designated for the toll collection facilities. The pavement will be reinforced with Glass Fiber Reinforced Polymer (GFRP) bars. Transverse joints and longitudinal joints will be placed at positions equal to lane widths and as shown on the CCRMA details. Power will be provided by others and terminated at an enclosure in an area within 500 feet of ILP. The SI is responsible for the communication links between the Host, the CSC, the VPC, and all Remote Express Toll Location facilities.

Except as may be expressly indicated elsewhere, all toll system infrastructure required for the TCS at the designated remote Express Toll Locations will be provided and installed by others. The principle items of work and primary components of the TCS infrastructure at each remote Express Toll Location shall include, but are not limited to:

- GFRP Bar Reinforced Pavement Section;
- Retaining Walls and Coping Details;
- Drainage Features;
- Civil Site Work, including Grading, Access Driveways, Fencing and Drainage;
- All toll gantry procurement and installations, including foundations and gantry structures;
- Toll Pad concrete foundation slab to include cabinets specified by SI;
- Conduit and ground boxes providing connections between the Pad's and the ETC Lane equipment installations. NOTE: It is the responsibility of the SI to coordinate with the Roadway Contractor(s) for the placement and installation of these elements to ensure that the construction is acceptable for the TCS as designed;

- Gantry and ILP enclosure lightning protection air, terminal, Down Conductors, Pad;
- Master Ground Bus Bar, and Ground Electrodes. Equipment connection to the Ground Electrode for the ILP enclosure Master Ground Bus Bar will be provided by Others;
- Backup Electrical Power including Emergency Generators, Fuel Tanks, and Automatic Transfer Switches;
- Power and WAN communication services up to the location of the proposed Pad enclosures; and
- All signing, pavement markings, traffic barriers and other roadway appurtenances required at each remote Express Toll Location.

A7.0 Work Authorization Toll Facilities Responsibility Matrix

The SI is responsible for design and coordination of the various aspects of the TCS as identified in the ***ATTACHMENT C - Toll Facilities Responsibility Matrix***, and shall work with CCRMA, TxDOT, roadway designers and contractors, and others as described herein.

A8.0 Project Schedule

The Project Schedule shall be developed to incorporate the Milestone Dates established for this Work Authorization.

ATTACHMENT B

CCRMA SH-550 TOLL SYSTEM				UNIT PRICE		AMOUNT	
ITEM #	QTY.	UNIT	DESCRIPTION	DOLLARS	CENTS	DOLLARS	CENTS
1	1	LS	Installa on/Electrical Design and Plans	9,535	00	9,535	00
2	1	LS	Field Installa on and Electrical Work, Materials and Labor	317,183	00	317,183	00
3	2	Ea.	Site Prep	32,646	00	65,292	00
4	1	Ea.	Dual 3343 Cabinet, A/C, and Founda on	72,743	00	72,743	00
5	1	LS	Primary Electrical Service	21,226	00	21,226	00
6	2	Ea.	Zone Controller Hardware & SW	30,624	00	61,248	00
7	2	Ea.	Communica on Equipment	61,479	00	122,958	00
8	6	Ea.	Automa c Vehicle Classi ca on System, Express ETC Lane	16,392	00	98,352	00
9	4	Ea.	AVI System Hardware, Express ETC Lane	14,598	00	58,392	00
10	6	Ea.	Viola on Enforcement System Hardware, Express ETC Lane	40,473	00	242,838	00
11	1	LS	UPS	13,322	00	13,322	00
12	0	LS	Emergency Generator & Automa c Transfer Switch	49,697	00	-	00
13	1	LS	ROMS HW/SW & Security Server(s) (ie: Digital Video Recorder & Audit)	76,897	00	76,897	00
14	1	LS	Host System (Store & Forward) HW/SW	50,592	00	50,592	00
15	1	LS	Training	8,321	00	8,321	00
16	1	LS	Documenta on	34,979	00	34,979	00
17	1	LS	Project Management	65,375	00	65,375	00
18	1	LS	Spare Equipment	27,901	00	27,901	00
19	1	LS	Site Commissioning Test	19,863	00	19,863	00
20	1	LS	Opera onal Test	19,863	00	19,863	00
					Total	1,386,880	00

The Pricing shown above Excludes:

-- Bonding

-- Excludes UAE Cer ca on/Tes ng and all other UAE costs

-- Gantries (provided by others)

-- All Recurring Data Communica on Costs

-- Recurring 3rd-Party SW/HW Support Agreements & SW Licenses

-- System HW/SW Warranty/Maintenance Services/Support & Spares Replenishment Costs

TOLL COLLECTION SYSTEMS IMPLEMENTATION AND MAINTENANCE

Responsibility Matrix

SH550 – Port Spur Toll Project

LEGEND	
Primary Responsibility	A
Support Responsibility	B
Coordination Responsibility Only	C
No Responsibility	D

Work Description	1	2	3
	Design	Procure	Install and/or Construct

Element/Task/Component/ Sub-system	CCRMA (TXDOT) Civil Designer (Contractor)			CTRMA (TELVENT USA) System Integrator (SI)			Comments Other Responsibility/Information
TOLL COLLECTION FACILITIES	1	2	3	1	2	3	
TOLL GANTRIES, RAMPS & ENCLOSURES							
Schedule	TBD	TBD	TBD	TBD	TBD	TBD	
Gantries, Main Lane and Enclosure Layouts, AVI Brackets	A	A	A	B	B	C	SI to provide locations and elevations for AVI brackets, and locations for loop layouts and enclosures. Designer to incorporate into Physical Layout Design Packages. Roadway Contractor to furnish and install foundations with conduit and other systems rough-in's
Gantry & Enclosure Physical Layout	A	A	A	B	D	B	Concept Drawings provided by Designer
Grading	A	A	A	D	D	D	Designer to provide grading requirements. Roadway Contractor to complete all required grading.
Drainage	A	A	A	D	D	C	Designer to provide grading requirements. Roadway Contractor to complete all required drainage work..
Utilities	A	A	A	B	D	B	Roadway Contractor to furnish and install electrical service to meet specific electrical power requirements for the HVAC & Toll Collection System.

TOLL COLLECTION SYSTEMS IMPLEMENTATION AND MAINTENANCE

Responsibility Matrix

SH550 – Port Spur Toll Project

LEGEND	
Primary Responsibility	A
Support Responsibility	B
Coordination Responsibility Only	C
No Responsibility	D

Work Description	1			2			3
	Design			Procure			Install and/or Construct

Element/Task/Component/ Sub-system	CCRMA (TXDOT) Civil Designer (Contractor)			CTRMA (TELVENT USA) System Integrator (SI)			Comments Other Responsibility Information
							Roadway Contractor to provide necessary "clear zone" at or near ROW for installation of electrical service, including misc grading and drainage as required by service design and /or Utility.
HVAC	A	A	A	B	D	B	Roadway Contractor to provide HVAC as part of the 332D Roadside Enclosure
Striping	A	A	A	B	D	D	Designer to incorporate into Striping Plan. Roadway Contractor to furnish and install
Gantries	B	A	A	A	D	C	SI to provide requirements for specific equipment mounts, conduits, J Boxes, power and data cables. SI will Install all power and communication wiring from the 332D roadside enclosures to the gantries. Designer to incorporate into design. Roadway Contractor will furnish and install all equipment mounts, conduits, and J Boxes.

TOLL COLLECTION SYSTEMS IMPLEMENTATION AND MAINTENANCE

Responsibility Matrix

SH550 – Port Spur Toll Project

LEGEND	
Primary Responsibility	A
Support Responsibility	B
Coordination Responsibility Only	C
No Responsibility	D

Work Description	1 Design	2 Procure	3 Install and/or Construct			
Roadside Cabinets & ILP Enclosure Foundations; Electrical Power & Data: Conduits, Primary Electrical Power Conductors & Electrical Service and Utility power	B	A	A	A	B	B	SI to provide requirements for specific equipment enclosures, equipment mounts, conduits, J boxes, power and data wiring for Toll Collection System. SI will install all power and communications wires from the main power distribution panel to the 332D roadside enclosures. Designer to incorporate into design. Roadway Contractor will provide and install all 332D roadside enclosures with HVAC, Provide main disconnect, and main power distribution panel. Install all wiring from meter pole to main disconnect.
Roadside 332D Cabinets with Air Conditioning	A	A	A	A	B	B	SI to provide requirements for specific equipment enclosures, equipment mounts, conduits, J boxes, power and data wiring for Toll Collection System. Designer to incorporate into design. Roadway Contractor will furnish and install foundations, Conduits, Electrical Power Conductors & Electrical Service and Utility power pole. Roadway Contractor to furnish and install all

TOLL COLLECTION SYSTEMS IMPLEMENTATION AND MAINTENANCE

Responsibility Matrix

SH550 – Port Spur Toll Project

LEGEND	
Primary Responsibility	A
Support Responsibility	B
Coordination Responsibility Only	C
No Responsibility	D

Work Description	1 Design	2 Procure	3 Install and/or Construct			
						332D roadside enclosures with HVAC.
Systems Servers	C	C	C	A	A	A SI to provide toll system servers.
Security Camera	C	C	C	A	A	A SI to install Security Cameras to Monitor Equipment Enclosures, and Gantry
Fencing/Guardrail/Bollards (ILP: If Required)	A	C	C	A	A	A SI to provide requirements for specific equipment clearances for Toll Collection System. Designer to provide design details. SI to furnish and Install Generator pad fencing.
Communications System and Facility Security Design: Physical Security	A	C	C	A	A	A SI to provide communications and security design requirements at each tolling location/ITS location for Toll Collection System Designer to provide physical security requirements and incorporate into plans. SI to furnish and install required system, facility, and physical security components and systems. Roadway Contractor will provide and install all communication poles/masts/enclosures based on SI recommendations.

TOLL COLLECTION SYSTEMS IMPLEMENTATION AND MAINTENANCE
Responsibility Matrix
SH550 – Port Spur Toll Project

LEGEND	
Primary Responsibility	A
Support Responsibility	B
Coordination Responsibility Only	C
No Responsibility	D

Work Description	1 Design			2 Procure		3 Install and/or Construct	
• **VES Cameras**							
VES Camera, Light Sensor & Strobe Flash Mounting Supports	A	A	A	B	D	C	SI to provide VES Camera, Light Sensor & Strobe Flash Mounting design requirements at each tolling location for Toll Collection System. Designer to incorporate VES Camera & Strobe Flash Mounting requirements into the designs. Roadway Contractor to furnish and install VES Camera & Strobe Flash Mounting (AVI Brackets)
Cameras, Light Sensors & Strobe Flash mounting and enclosures	B	A	A	A	A	A	SI to provide VES Camera & Light Sensor Mounting design requirements at each tolling location for Toll Collection System. Designer to incorporate VES Camera & Strobe Flash Mounting requirements into the designs. Roadway Contractor to furnish and install structural mounting supports, conduit, j-boxes, for power and data. For VES Camera & Strobe Flash Mounting SI to furnish and Install VES Camera &

TOLL COLLECTION SYSTEMS IMPLEMENTATION AND MAINTENANCE

Responsibility Matrix

SH550 – Port Spur Toll Project

LEGEND	
Primary Responsibility	A
Support Responsibility	B
Coordination Responsibility Only	C
No Responsibility	D

Work Description	1			2			3			
	Design			Procure			Install and/or Construct			
										Light Sensor Equipment, including equipment mounting brackets, power and data cable / wiring
VES Illumination mounts and enclosures	B	B	B	A	A	A				SI to provide VES Illumination Mounting design requirements at each tolling location for Toll Collection System. Designer to incorporate VES Illumination Mounting requirements into the designs. SI to furnish and Install VES Illumination, including equipment mounting brackets, power and data cable & wiring
Overhead Lane Mode Signals & LED's	N/A	N/A	N/A	N/A	N/A	N/A				
Canopy Over-ride Switch	N/A	N/A	N/A	N/A	N/A	N/A				
CO Sensors	N/A	N/A	N/A	N/A	N/A	N/A				

TOLL COLLECTION SYSTEMS IMPLEMENTATION AND MAINTENANCE

Responsibility Matrix

SH550 – Port Spur Toll Project

LEGEND	
Primary Responsibility	A
Support Responsibility	B
Coordination Responsibility Only	C
No Responsibility	D

Work Description	1 Design			2 Procure			3 Install and/or Construct			
• **Lanes/Islands**										
Vehicle Detection/Classification Sensors Pavement Structure	A	A	A	B	D	C				SI to provide the sensor design requirements Designer to incorporate requirements into the designs. Roadway Contractor to furnish and install pavement and appruntences for Vehicle Detection/Classification Systems
Vehicle Detection/Classification Sensors Installation of AVDS and AVC	B	B	B	A	A	A				SI to provide the sensor design requirements. SI to provide install, including cutting and saw cutting, winding and sealing loops
Island Traffic Signal Head Conduit, J Box, Wiring	N/A	N/A	N/A	N/A	N/A	N/A				
Flashing Warning Lights Conduit/Boxes/Wiring	N/A	N/A	N/A	N/A	N/A	N/A				
PROJECT OPERATING SUB-SYSTEMS										
Design	D	D	D	A	A	A				
Ducts & Conduits	B	A	A	A	D	B				SI to provide detailed drawings and specific requirements on ducts and conduits. Designer to incorporate requirements into

TOLL COLLECTION SYSTEMS IMPLEMENTATION AND MAINTENANCE

Responsibility Matrix

SH550 – Port Spur Toll Project

LEGEND	
Primary Responsibility	A
Support Responsibility	B
Coordination Responsibility Only	C
No Responsibility	D

Work Description	1		2		3		
	Design		Procure		Install and/or Construct		
							the design. Roadway Contractor to install all ducts and conduits .
Utility Vaults & Junction/Pull Boxes	B	A	A	A	D	B	SI to provide detailed drawings and specific requirements on utility vaults and junction/pull boxes. Designer to incorporate requirements and drawings into the design. Roadway Contractor to install all utility vaults and junction/pull boxes.
Communication Conductors, Fiber and Wireless Corridor Communication:	A	C	C	B	A	A	SI- External to SH550 Corridor All communication up to Edge of ROW near the ILP shall be provided by others. Within the SH550 Corridor: Corridor intersystem/site communication to be WiMAX Wireless (IEEE 802.XXx)
All Conduit, wire way, J-boxes, bushings, and pull springs	B	A	A	A	D	C	Roadway Contractor to provide and install all conduit, wire ways, J-boxes and pull strings on Gantry

TOLL COLLECTION SYSTEMS IMPLEMENTATION AND MAINTENANCE
Responsibility Matrix
SH550 – Port Spur Toll Project

LEGEND	
Primary Responsibility	A
Support Responsibility	B
Coordination Responsibility Only	C
No Responsibility	D

Work Description	1 Design	2 Procure	3 Install and/or Construct			
PROJECT POWER DISTRIBUTION SUB-SYSTEM						
Conduits/Ducts & Junction/Pull Boxes/ Outlets up to the Automatic Transfer Switch	B	A	A	A	D	B	SI to provide pad drawings and conduit layouts. Designer to incorporate requirements and drawings into the design. Roadway Contractor to provide necessary conductors, ducts & junction/pull boxes and install.
Uninterruptible Power Supplies	B	C	C	A	A	A	SI to provide Toll Collection System UPS power as part of the 332D Roadside Cabinets, with graceful shut-down.
Lightning Protection & Grounding	A	A	A	A	A	A	Designer to provide Lighting Protection System for ETC Gantry. Roadway Contractor to furnish and install Lighting Protection System for Gantry. Including Master Ground Bus Bar for ILP. SI to furnish and install Lighting Protection System for 332D roadside enclosures.
Lightning Protection & Grounding	C	D	C	A	A	A	SI to furnish and install ETC System lighting surge suppression system, for feeder circuits, video, detector, communication, data and control circuits.

TOLL COLLECTION SYSTEMS IMPLEMENTATION AND MAINTENANCE

Responsibility Matrix

SH550 – Port Spur Toll Project

LEGEND	
Primary Responsibility	A
Support Responsibility	B
Coordination Responsibility Only	C
No Responsibility	D

Work Description	1 Design			2 Procure			3 Install and/or Construct			
INTELLIGENT TRANSPORTATION SYSTEMS (ITS)										
Design	D	D	D	D	D	D				
Conduits/Ducts & Junction/Pull Boxes	D	D	D	D	D	D				
COMMUNICATIONS SUB-SYSTEMS										
Design Outside Physical Plant(OSP)	D	D	D	B	D	D				OSP: SI to provide Plaza specific communications design requirements.
Design Outside Cable Plant and Inside Network Equipment	C	C	C	A	A	A				Network Equipment: E SI to furnish, install, and make operational all outside and inside communication plant and equipment
Fibers (including future)	D	D	D	D	D	D				
Computer Rack System	D	D	D	A	A	A				
Routers	D	D	D	A	A	A				
Hubs	D	D	D	A	A	A				
Switches	D	D	D	A	A	A				
Firewalls	D	D	D	A	A	A				
Virtual Private Network (VPN)	D	D	D	A	A	A				
Modems	D	D	D	A	A	A				
Patch/Distribution Panels	D	D	D	A	A	A				

TOLL COLLECTION SYSTEMS IMPLEMENTATION AND MAINTENANCE
Responsibility Matrix
SH550 – Port Spur Toll Project

LEGEND	
Primary Responsibility	A
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Coordination Responsibility Only	C
No Responsibility	D

Work Description	1		2		3		
	Design		Procure		Install and/or Construct		
TOLL COLLECTION SYSTEMS							
Toll Lane In-Lane Processors	C	D	B	A	A	A	SI to provide Designer with requirements. SI to incorporate into design. Contractor to provide conduit and structure to mount equipment. SI to furnish and install in ILP HUB
MOMS (Maintenance Online Management System)	D	D	D	A	A	A	SI to provide connection/interface with MOMS server. At least one workstation will be provided at the CCRMA Administrative Offices.
VES Computer	B	B	B	A	A	A	SI to provide Designer with requirements. SI to incorporate into design. CCRMA to provide location, conduit and structure to mount equipment. SI to furnish and install VES Computer
FCC Licenses/Regulations as applies to AVI	A	D	A	A	B	B	SI to provide required documentation to permit the CCRMA to obtain the required licenses to use and or operate AVI equipment and components. CCRMA to provide exhibit documents for Application and FCC Schedule D & H

TOLL COLLECTION SYSTEMS IMPLEMENTATION AND MAINTENANCE

Responsibility Matrix

SH550 – Port Spur Toll Project

LEGEND	
Primary Responsibility	A
Support Responsibility	B
Coordination Responsibility Only	C
No Responsibility	D

Work Description	1		2		3	
	Design		Procure		Install and/or Construct	
						Roadway Contractor to provide NAD83 Lat & Long, and Elevation Data
Express AVI lanes AVI Antenna Mounting, Conduits and J-Boxes	A	A	A	B	D	A	SI to provide Designer with AVI requirements. Designer to incorporate into design. Roadway Contractor to provide structure, mounting support, and conduit to install AVI Antenna and cable SI to furnish and install AVI System
Express AVI lanes AVI System	B	D	B	A	A	B	SI to provide Designer with AVI requirements. Designer to incorporate into design. Roadway Contractor to provide structure, mounting support, and conduit to install AVI Antenna and cable SI to furnish and install AVI System
Material On Hand Storage, Insurance, and Transfer of Ownership	D	D	D	A	A	A	SI to be responsible for storage & control of all materials and equipment until installed on site, and storage.