



June 16, 2025

**INVITATION TO BID
BL084-25**

The Gwinnett County Board of Commissioners is soliciting competitive sealed bids from qualified suppliers for the **Purchase of Traffic Signal Electrical Equipment, Material, and Line Hardware on an Annual Contract** with four (4) renewal options for the Department of Transportation.

Bids should be typed or submitted in ink and returned in a sealed container marked on the outside with the BL # and Company Name. **Sealed Bids will be received until 2:50 P.M. local time on July 8, 2025, at the Gwinnett County Financial Services - Purchasing Division – 4th Floor Charlotte J. Nash Building, 75 Langley Drive, Lawrenceville, Georgia 30046. NOTE THAT THE PURCHASING DIVISION WILL BE TEMPORARILY RELOCATING. ALL BIDS MUST BE SUBMITTED AT THIS LOCATION. Any bid received after this date and time will not be accepted**

A **virtual pre-bid conference** is scheduled for **10:00 A.M. on June 23, 2025**. To access the meeting please use the following on Teams: Meeting ID: **216 295 535 158** and the password: **5vr93dW2**. If you would like to attend via Phone, please dial +1 323-676-6170 and the access code is 294 172 309#. All vendors are urged to attend.

Questions regarding bids should be directed to **Michael Milstein, Purchasing Associate II, at Michael.Milstein@gwinnettcounty.com** or by calling 770-822-7811 no later than **10:00 A.M. on June 25, 2025**. Bids are legal and binding upon the bidder when submitted. All bids should be submitted in duplicate.

Gwinnett County does not discriminate on the basis of disability in the admission or access to its programs or activities. Any requests for reasonable accommodations required by individuals to fully participate in any open meeting, program or activity of Gwinnett County Government should be directed to the ADA Coordinator at the Gwinnett County Justice and Administration Center, 770-822-8165.

The written bid documents supersede any verbal or written prior communications between the parties.

Award will be made to the supplier submitting the lowest responsive and responsible bid. Gwinnett County reserves the right to reject any or all bids, to waive technicalities, and to make an award deemed in its best interest. Bids may be split or awarded in entirety. Gwinnett County reserves the option to negotiate terms, conditions and pricing with the lowest responsive, responsible bidder(s) at its discretion.

All companies submitting a bid will be notified in writing of award.

We look forward to your bid and appreciate your interest in Gwinnett County.

Michael Milstein
Purchasing Associate II

The following pages **should** be returned in duplicate as your bid: **Bid Schedule, Pages 23-30**
References, Page 31
Ethics Affidavit, Page 32

TRAFFIC SIGNAL EQUIPMENT**I. GENERAL**

- A. Gwinnett County reserves the right to compare pricing with the current State of Georgia DOT contract pricing.
- B. All unit prices **must** include any freight and/or delivery charges. Freight or delivery charges must be calculated F.O.B. Destination to Gwinnett County delivery point. No additional freight or delivery charges will be paid by Gwinnett County. All prices are to be calculated F.O.B. delivered to destination as follows:
- Gwinnett County Dept. of Transportation
Traffic Engineering Division
DOT Central Facility
620 Winder Hwy
Lawrenceville, GA 30046
Phone: (678) 639-8800
- C. Deliveries will be accepted Monday through Friday from **8:00 AM to 2:00 PM only**. One (1) business day notice is required before delivery, with 2 business days' notice preferred.
- D. Quantities are approximate annual usage. Orders will be place on an "as needed" basis by the user department. Therefore, no actual amount of usage can be guaranteed. Unit prices quoted must be honored no matter what amount is ordered.
- E. Gwinnett County is exempt from Federal Excise Tax and Georgia Sales Tax. Suppliers are responsible for sales tax and should contact the State of Georgia Sales Tax Division for additional information.
- F. The use of brand names is to establish a standard of quality and the words "or equivalent" if not written, is implied. Where "do not substitute" appears, items are for compatibility with existing equipment and more than one vendor may bid. If no specific reference item is given, then the item should meet the applicable specifications.
- F. Technical specifications/brochures of sufficient detail should be submitted with your bid for Gwinnett County's use in determining compliance with the specifications or equivalency with the reference item.
- G. Award will be made to the supplier(s) submitting the lowest responsive and responsible bid. Bids may be split or awarded in entirety. Individual line items may be awarded to more than one vendor to ensure compatibility with systems. Multiple line items may be awarded to one (or more) vendor(s) to ensure compatibility.

II. SPECIFICATIONSNEMA

All "NEMA" equipment shall comply with all applicable provisions of the National Electrical Manufacturer's Association TS1 specification and shall be compatible with 2070 traffic signal controller assemblies, including pre-emption, four-ring, and closed loop system operation.

GDOT Specifications

All items shall be in conformance with current Georgia Department of Transportation (GDOT) Standard Specifications and Special Provisions (as of the date of this advertisement) or as

modified herein. Sections and/or Special Provisions 647, 925, 926, 927, 935, 936, 937, 939, & 942 will be most pertinent.

Please note that the GDOT traffic signal standard details along with specifications 647, 925, and 937 were modified in 2021. Materials that meet the previous GDOT specifications but do not meet the 2021 GDOT Specifications will be considered for approval by Gwinnett County DOT on a case-by-case basis.

Gwinnett County DOT Special Provisions

All items shall be in conformance with current Gwinnett County Department of Transportation (GCDOT) Special Provisions or as modified herein. In particular, this includes 682, 925, 926, 935, 936, 937, 939, and 942. These Gwinnett County special provisions have been added as an attachment to this document.

Type 2070LX Equipment (Items 1-13)

These units shall comply with the current GDOT Standard Specifications Section 925 with following additional requirements.

- The 2070LX controller units and 2070 1C Modules shall be compatible with the current Georgia Department of Transportation licensed firmware.
- Each 2070LX controller unit and 2070 1C Module shall be shipped to Gwinnett County with the current GDOT license intersection firmware installed and operational.

2070LX Controller Units and 2070 1C Modules (Items 6 & 7) will be awarded to a single low bidder to ensure consistency of operation and compatibility with existing equipment.

Conflict Monitor (Item 14)

These units shall comply with the current GDOT Standard Specifications Section 925 with following additional requirements.

- Ethernet port to provide access between the monitor and the TCC. Monitor status, event logs, and Signal Sequence History logs are stored in nonvolatile memory for diagnostic and archival purposes.
- An HTML interface shall be provided in the monitor to configure the network parameters of the MMU Ethernet port via a standard web browser.
- Configured for operation with a 2070 Controller Unit in a 332 cabinet with 18 channels of monitoring and at least three modes to support Flashing Yellow Arrow operation.
- Configured with a removable Datakey memory device that contains all the monitor set-up information and eliminates the need for a diode Program Card, soldered jumpers and DIP switches.

Inductance Loop Detectors (Item 15)

These items shall comply with the current GDOT Standard Specifications Section 925 with following additional requirements.

- The detector shall have solid state outputs, a "back-lit" LCD screen display, and programmable settings that are stored in non-volatile memory.
- The following status and function displays shall be provided: loop frequency, loop inductance, L/ Δ L % value, accumulated number of loop failures, and timer countdown of programmed functions.

- The following functions shall be programmable from the front panel: loop frequency, sensitivity, mode of operation, call delay, and extension timers.

One style of loop detector is needed:

- Dual Channel, Rack Mount, 332 Cabinet Compatible

Battery Backup System Components with External Cabinet (Items 16-19)

These items shall comply with the current GDOT Standard Specifications Section 925 with following additional requirements.

- BBS Cabinets shall be base mounted only per Mounting Installation, Type B.
- BBS Cabinets shall have an external connection for generator hookup with automatic generator transfer switch.
- Minimum 1000 watt power output capacity.
- Ethernet communications module standard with email notification capability.
- Hot swappable bypass switch.
- An HTML interface shall be provided to configure the network parameters of the MMU Ethernet port via a standard web browser.

All battery backup system equipment with and including external cabinet will be awarded to a single low bidder to ensure consistency of operation and compatibility with existing equipment.

Beacon Cabinet Assembly (Items 20)

Standard details "Solar Powered Flashing Beacon Assembly" and "Standard Flashing Beacon Assembly" have been included in the appendix of this proposal.

This line item is for the cabinet and contents only. The cabinet shall be equipped with 2" x 2" tabs on top and bottom to allow bolting or banding to poles.

Standard details " School Flasher Assembly Specification" and "Solar Powered School Flasher Assembly Specification" have been included in the appendix of this proposal.

This line item is for the cabinet and contents only. The cabinet shall be equipped with 2" x 2" tabs on top and bottom to allow bolting or banding to poles.

Solar Powered Flasher Cabinet Battery (Item 21)

The Battery(s) shall be a Gel battery and have a nominal voltage of 12 VDC. The battery(s) shall be sized to allow four (4) days of autonomy and provide sufficient power to support remote communications at a power consumption rate of 1 ampere hour per day. The battery(s) shall conform to the following criteria.

- Operating temperature range:
 - a. Discharge: -26 degrees F to + 140 degrees F.
 - b. Charge: -4 degrees F to +122 degrees F.
 - c. Vents: Pressure relief vents permanently attached
- Sealed Construction: Will not spill or leak
- Flag Terminals: Hold clearances for 5" bolt
- Battery(s) shall be housed in the battery cabinet specified above.
- The battery(s) shall carry a prorated warranty for a minimum of five (5) years.

Solar Panel for Solar Powered Flasher Cabinet Assembly (Item 22)

The solar panel shall have a nominal voltage of 12 VDC for standard output. The solar panel shall have 36 silicon solar cells in a 4 x 9 or similar configuration. The solar panel shall conform to the following criteria.

- Maximum Power Generation: 80 watts
- Voltage at Max Power: 16.9 to 17.2 volts
- Current at Max Power: 4.60 to 4.80 amps
- Open circuit voltage: 21 to 22 volts
- Short circuit current: 4.95 to 5.20 amps
- Operating Temperature Range: -40 degrees C to + 85 degrees C.
- Weight: 18 lbs or less

All solar cabinets, panels, and batteries will be awarded to a single low bidder to ensure consistency of operation and compatibility with existing equipment.

Rectangular Rapid Flashing Beacon (RRFB) Assembly Requirements (Items 26)

These items shall comply with the current GDOT Standard Specifications Section 925 with following additional requirements.

1. Provide Rectangular Rapid Flashing Beacon Assemblies in the quantities and locations indicated in the Plans.
2. Provide all equipment, materials, and work in accordance with manufacturers' recommendations, including mounting, wiring and cabling, power supply, surge suppression, and communications equipment and materials.
3. Verify all provisions of the MUTCD applicable to warning beacons are met except as otherwise provided in this section.

Rectangular Rapid Flashing Beacon Assembly

1. Provide a RRFB assembly that meets the criteria FHWA "Interim Approval for Optional Use of Rectangular Rapid-Flashing Beacons at Uncontrolled Marked Crosswalks (IA-21)", March 20, 2018
2. The Rectangular Rapid Flashing Beacon Assembly consists of the following components and materials:
 - a. Pole and pedestal base
 - b. Solar cell/battery power source
 - c. Signs
 - d. LED flashing beacon
 - e. Cabinet and activation system
 - f. Wireless subsystem
 - g. Pushbutton station
 - h. Mounting hardware (stainless steel)
3. Verify Rectangular Rapid Flashing Beacon Assembly meets the performance requirements listed below:
 - a. Beacon Operation
 - i. Uses pedestrian pushbuttons similar to those identified in the "pedestrian pushbutton station and mounting hardware" section above in order to actuate the Rectangular Rapid Flashing Beacons. This shall include station, sign, and push

- button. Push button shall have piezo switch and be vandal-proof to withstand hammer blows.
- ii. Powered by solar cells and batteries with automatic battery charging and power control.
 - iii. Uses wireless communication to avoid trenching.
 - iv. The Rectangular Rapid Flashing Beacon shall have a minimum visual distance of 1,000 ft (305 m) during daytime and nighttime.
- b. Wireless Subsystem
 - i. Puck style antenna
 - ii. Frequency in the 900 MHz FHSS or 2.4 GHz range.
 - iii. Range: minimum 500 ft. (152 m)
 - c. Solar Panel Subsystem and Batteries
 - i. Solar Panel Output: minimum 20W panel or as required by the manufacturer.
 - ii. Batteries: Batteries shall be sealed and maintenance free with a minimum lifespan of 3 years. Battery type shall be sealed valve regulated lead acid batteries, or 12V, 20-40AH Sealed Gel, or approved equivalent.
 - iii. Cabinet: Shall be pole mounted NEMA 4 rated fiberglass cabinet with locking clasps or powder coated aluminum with tamper-proof hinged door or approved equivalent.
 - iv. Solar Panel Mount: pole mount with 60-degree angle bracket or manufacturer recommended specifications.
4. Mounting Pole and Pedestal Base
- a. Provide a 4-inch mounting pole and breakaway pedestal base designed to support the Rectangular Rapid Flashing Beacon and the associated solar panel, batteries, and equipment required to supply a complete Rectangular Rapid Flashing Beacon.
 - b. Mounting pole shall be a minimum of 14 feet in height.
 - c. Mounting pole, pedestal base, and ancillary mounting brackets shall be black.

Traffic Signal Heads (Items 27)

These items shall comply with the current GDOT Standard Specifications Section 925 with following additional requirements.

- Signal heads shall be furnished as either 3 or 4 section vertical heads with a 7-circuit barrier terminal strip in the top of the yellow section.
- Signal heads shall be all black polycarbonate and include tunnel visors.
- Signal heads shall not include lenses or reflectors.

Back Plates, 3, 4, And 5 Section (Items 28)

These items shall comply with the current GDOT Standard Specifications Section 925 with following additional requirements.

- All back plates shall have a 2" reflective border.
- Back plates for 3 and 4 section vertical heads shall be one-piece vacuum-formed.
- Back plates for 4 section "T" heads and 5 section cluster signal head assemblies shall be constructed to fit Pelco 2-way bracket used in the signal head assembly.
- If bidder does not have forms available to produce back plates for the particular type of signal head (and/or two-way bracket for 5-section back plate), bidder may state one-time charge for forms. Both this and unit prices will be considered in awarding these bid items.

LED Traffic Signal Modules (Items 29)

1. The LED Traffic Signal Circular and Arrow Modules shall meet or exceed the minimum performance requirements of the current Institute of Transportation Engineers (ITE)

standards, including but not limited to the "Vehicle Traffic Control Signal Heads (VTCSH).

2. Vendors shall provide all necessary documentation to show compliance with VTCSH requirements with their bid. If pertinent information is lacking from a bid, the bid will be deemed "NON-RESPONSIVE" and will not be considered.
3. Upon request by the County, vendors should be prepared to provide sample modules for testing and all necessary documentation for determination of compliance with the specifications and if necessary, true equivalency with other products.
4. Warranty - Manufacturer will provide the following warranty provisions:
 - a) Replacement or repair of an LED signal module that fails to function as intended due to workmanship or material defects within the first 72 months from the date of delivery or the first 25,000 hours of runtime for red and green modules and the first 5000 hours for yellow modules.
 - b) Replacement or repair of LED signal modules that exhibit luminous intensity of less than the minimum values specified in the current ITE specification, within the first 72 months from the date of delivery or the first 25,000 hours of runtime for red and green modules and the first 5000 hours for yellow modules.
5. All LED circular and arrow signal modules have to be suitable for span wire installations with an expanded view radiation pattern. Gwinnett County DOT requires clear lenses.

The LED circular module wattage shall meet the following requirements:

Module	Wattage Range
12" Red Ball	6 to 9
12" Yellow Ball	7 to 10
12" Green Arrow Ball	6.5 to 11

The LED arrow module wattage shall meet the following requirements:

Retrofit	Wattage Range
12" Red Arrow	5 to 10
12" Yellow Arrow	6 to 12
12" Green Arrow	5 to 10

LED Modules, 12 Volt DC (Item 30)

These modules will be used in solar powered flasher assemblies. The modules shall fit a 12 inch signal head and be 12VDC, power consumption of 10 watts or less and mounted with the appropriate focal point to provide the maximum intensity for the 12" signal head

All LED ball and arrow signal modules will be awarded together to a single low bidder.

LED Pedestrian Countdown Module (Item 31)

1. The LED Pedestrian Countdown Modules shall meet or exceed the minimum performance requirements of the current ITE standards, including but not limited to "Pedestrian Traffic Control Signal Indications (PTCSI).
2. Vendors shall provide all necessary documentation to show compliance with PTCSI requirements with their bid. If pertinent information is lacking from a bid, the bid will be deemed "NON-RESPONSIVE" and will not be considered.

3. Upon request by the County, vendors should be prepared to provide sample modules for testing and all necessary documentation for determination of compliance with the specifications and if necessary, true equivalency with other products.
4. Warranty - Manufacturer will provide the following warranty provisions:
 - a) LED Pedestrian Countdown Modules shall be replaced or repaired if it fails to function as intended due to workmanship or material defects within the first 72 months from the date of delivery or the first 25,000 hours of runtime.
 - b) LED Pedestrian Countdown Modules which exhibit luminous intensities less than the minimum values specified in current ITE standards within the first 72 months of the date of delivery shall be replaced or repaired or the first 25,000 hours of runtime.
5. Specifications for LED Pedestrian Countdown Modules
 - a) The module shall be 16" x 18" with minimum 9" height countdown numbers and capable of use in new installations or for retrofitting existing signal heads.
 - b) The module shall be MUTCD compliant for crossing distances between 40 and 150 feet.
 - c) The lens covering of the module shall be a UV stabilized polycarbonate and provide a uniform, incandescent appearance with no glare.

The LED Pedestrian Countdown module wattage shall meet the following requirements

Indication	Wattage Range
Hand	8 to 11
Person	8 to 12
Countdown (Numbers)	5 to 10

The module should have an internal conflict monitor to prevent walk and don't walk indications from coming on at the same time. All electrical connections shall provide moisture and dust protections with quick connect or spade terminal adaptors. No inline fuses will be allowed between the module and the terminal connector. The module shall be designed where the failure of an individual LED does not affect more than one other LED in the unit or result in the loss of a row, column, matrix or grid of lights. When not energized, the symbols and countdown timer shall be dark with no phantom image regardless of solar intensity or alignment. The LED module shall include any necessary gasket(s) that are required to mount the module in an 18" pedestrian signal head.

Requirements:

1. Operating voltage 80VAC to 135VAC (120 volts normal)
2. Operating temperature range: -40 degrees C to +74 degrees C
3. Turn on / Turn off time to <75msec
4. Minimum Luminance (cd/m²) required – 1,400 for hand and digits, 2,200 for Person
5. Meet FCC Title 47, subpart B, Section-15 regulations for electrical noise
6. All LEDs traceable by serial number
7. Sealed enclosure to prevent blowing rain and debris

Pedestrian Signal Head, Complete (Item 32)

This unit shall include both the LED pedestrian countdown signal module and the pedestrian

signal head. The Pedestrian Signal Head shall comply with the current GDOT Standard Specifications Section 925 with the following additional requirements:

1. The LED pedestrian countdown signal module provided shall be compliant with the specifications above and shall be installed by the vendor prior to delivery.
2. The pedestrian signal head will not include the optical system, double parabolic reflector, message lens and lamp sockets since LED countdown modules will be used.
3. The pedestrian signal head shall be black in color.
4. A clamshell mounting shall be included with each signal head. The mounting shall be attached to the head prior to delivery to GCDOT. We will require a quantity of both right and left side mountings.
5. The signal head shall have minimum overall dimensions of 18.5" W x 18.5" H x 9" D

Vandal Resistant Pedestrian Push Button (Item 35b)

This item should include the replacement pedestrian button assembly and any necessary adapter for easy installation onto an existing Pedestrian Pushbutton Station. The pushbutton must be highly vandal resistant and pressure activated with essentially no moving parts. The pushbutton should be manufactured by an ISO 9001:2008 registered company.

General Requirements

- The pushbutton should have a minimum 5 year warranty
- The pushbutton should have a piezo switch
- The pushbutton should have a Black body with a stainless steel button
- The pushbutton should be vandal proof to withstand blows from hammers and baseball bats
- The pushbutton should have a 4 bolt mounting capability
- The pushbutton should meet GR-1089-CORE extended to 6000V-400A, 25 reps, and 120VAC – 15 Mins. requirements for Lightning and Power Protection.
- The pushbutton should meet NEMA TS 2 Temperature & Humidity requirements.
- The pushbutton should meet NEMA TS 2 Transient Voltage Protection requirements.
- The pushbutton should meet IEC 6100-4-4, IEC 6100-4-5 Transient Suppression requirements.
- The pushbutton should meet FCC Title 47, Part 15, Class A Electronic Noise requirements.
- The pushbutton should meet NEMA TS 2 Mechanical Shock and Vibration requirements.
- The Push Button Station (PBS) Enclosure should meet NEMA 250 – Type 1 requirements.
- The Button housing must be cast aluminum powder coated and certified by an outside lab to meet applicable NEMA 250-6P requirements for Ingress of Water, Salt Spray, Corrosion, and Ingress of Foreign Objects.
- The pushbutton should meet NEMA TS 4 – Electrical Reliability requirements.

Functional and Operating Requirements

- Typical "Off" or Stand-By current of 15 micro-amperes.
- Operating Temperature Range -34C to +74C (-29F to +165F).
- Operating Voltage Range 12-36 VDC, 9-25 VAC RMS (18VDC Typical).
- In Momentary mode, typical "On" resistance 85 ohms.
- Button cap must be made of solid 316 stainless steel.
- Switch must be solid state electronic Piezo switch rated for 300 million cycles with no moving electrical contacts.
- Button must activate with 2 lbs force or less.
- Button must have an LED to give indication of button being pushed.

- Button LED must be able to function in a momentary mode without any additional control units, or latching mode by adding a single control unit into the cabinet.
- Both Momentary and Latching modes should require only the typical two wires from the cabinet to the push button. No additional wires from the cabinet, or ped head, shall be required.
- Button must give a two toned beep indication of button being pushed (one tone for push, one tone for release).
- In Momentary mode the button must be able to hold the call for a minimum of 5 seconds.
- Button must operate under water to a depth of 1 meter (electrical terminals isolated from the water).
- Button must fully operate immediately after being completely immersed in water for 5 minutes (electrical terminals isolated from the water).
- Button must not allow ice to form such that it would impede function of button or button cap.
- All switch electronics must be sealed within the cast aluminum housing.
- Total depth of button, from face of button cap to back of button terminal, must be less than 1.70 inches.
- Button must have raised ridges to protect the button from side impacts.

Pedestrian Push Button Station and Mounting Hardware (Items 35)

These items shall comply with the current GDOT Standard Specifications Section 925 with following additional requirements.

- The pushbutton station should be provided with a vandal resistant pedestrian pushbutton that meets the specifications above.
- The pushbutton station should have a black finish that will resist fading and chipping.
- The pushbutton station should have a solid back for 9"x15" stations.
- The pushbutton station should have a sign mounting that requires 4 screws.
- The pushbutton station should have a pushbutton mounting that requires 4 screws.

Accessible Pedestrian Push Button Station and Mounting Hardware (Items 36)

The Accessible Pedestrian Signal System consists of all electronic control equipment, mounting hardware, push buttons and signs, designed to provide both a push button with a raised vibrating tactile arrow on the button, and a multiple audible sounds differentiating pedestrian signal functions.

The APS system consists of push button stations installed on poles with existing or new pairs of button wires and a Central Control Unit installed in the traffic cabinet. The central control unit powers the push button stations over the 2 wires and uses digital data including pedestrian interval information and pedestrian calls for each phase to communicate with each push button station over the two low voltage button wires.

Supporting and substantiating documentation proving ISO, NEMA, IEC, and FCC requirements are met must be supplied from an outside Testing Services Laboratory.

General Requirements

- The System consists of a Central Control Unit (CCU) and Pedestrian Push Button Stations (PBS), as described below, and be capable of communicating with and programming with devices that support an iOS client application, or an Android client application, or Windows PC with Bluetooth® Low Energy dongle and Windows client application, for programming the system settings.
- The manufacturer must meet ISO 9001:2015 at a minimum and be a registered company.

- The System must meet the requirements of Made in America and/or The Buy American Act.
- The System should meet the functionality requirements of MUTCD 11th ed. – 4K and CAMUTCD 2011 – 4E.
- The System should meet NEMA TS 2 Section 2.1 Temperature & Humidity requirements, or TS4 equivalent.
- The System should meet NEMA TS 2 Section 2.1 Transient Voltage Protection requirements, or TS4 equivalent.
- The System should meet NEMA TS 2 Section 2.1 Mechanical Shock and Vibration requirements, or TS4 equivalent.
- The System should meet IEC 61000-4-4, IEC 61000-4-5 Transient Suppression requirements.
- The System should meet FCC Title 47, Part 15, Class A Electronic Noise requirements.
- The Push Button Station (PBS) Enclosure should meet NEMA 250 – Type 4X requirements.
- The Central Control Unit (CCU) Enclosure should meet NEMA 250 – Type 1 requirements.
- All System Components must be able to receive remote firmware updates.
- Remote updates of firmware must be done through the County's TMC, be accomplished either by a schedule or manually, and multiple intersection devices will receive the update simultaneously with monitoring to insure completion of the task and identifying corrective actions if necessary.

Functional Requirements

- The System must support a minimum of 16 PBS's per intersection (on at least 1 channel) controlled by a Central Control Unit (CCU) located in the traffic control cabinet.
- The System should vibrate a tactile arrow button during the WALK interval following a button push and/or every time the walk comes up.
- The System should have the field-selectable function known as "LOCATE TONE". This means that during the FLASHING DON'T WALK and DON'T WALK intervals, the system should provide a locating tone that emanates from the PBS. The system should provide at least 3 different sounds to choose from.
- The System should have the field selectable function known as "Extended Push Activation". This is defined as "the audible WALK message should only be activated and audible during the WALK interval if the button is depressed for a field selectable minimum period of time (from 0.5 to 6 seconds). Also, for the walk and clearance intervals that follow an extended push, the volumes should have a separately settable minimum and maximum volume level.
- The System should have the field selectable function known as "Informational Message". This means that a custom message giving the location of the street to cross and the intersection (or other information) will be vocalized only when the button is depressed for a minimum field selectable time.
- The System should provide a "Wait" message that plays once the button is activated, and until the Walk cycle goes into effect. This message must have the field selectable option of OFF, or repeating every 4, 6, 8 or 10 seconds.
- The System should have standard "Travel Direction" options that can be selected at the time of installation.
- The System should have at least 10 field selectable WALK sound options including a cuckoo, a chirp, an MUTCD rapid tick or custom voice message.
- The System should provide at least 7 Ped-clearance sound choices including audible countdown (field selectable). The audible countdown should represent the time remaining during the pedestrian Clearance interval. Timing is automatically adjusted to

the CLEARANCE INTERVAL timing, provided by the Traffic Controller. Due to flasher relay timing variables, audible and PED Head numbers may vary by approximately one second.

- The System should provide 2 language capabilities, selectable by user (as a field selectable feature).
- The PBS's should have wireless synchronization capabilities, from any APS button to any APS button, matched to a phase partner. Pedestrian button presses must be communicated between phase partners keeping the pilot LED in sync, as well as the audible messages during the Walk and Clearance PED intervals. This should be implemented on corners that do not contain button wires. The wireless synchronization capability should include sending Standard and Extended Push information to allow a call to be placed from a PBS without button wires (or degraded button wires) via a phase partner PBS that does have button wires to the traffic controller.
- The System should provide an Emergency Preemption Message in conjunction with a preemption system or Rail Road Preempt Input.
- The System LOCATE TONE, WALK, and DON'T WALK audible features should have independent assignable minimum and maximum volume limits. CLEARANCE volume level should be controlled by WALK volume setting.
- All sounds for all PBS's should be synchronized.
- The System should have a non-visible, ambient sensing microphone located in the pedestrian station in an environmentally protected housing.
- The LOCATE TONE volume should adjust automatically in response to ambient noise with field selectable adjustment levels from -30dB below to +20dB above ambient in 2.5dB increments.
- All other sound volumes should adjust automatically in response to ambient noise with field selectable adjustment levels from -30dB below to +20dB above ambient in 5dB increments.
- The System should utilize high quality digital audio technology, with a minimum 16-bit sample at a 48 kHz sample rate.
- The PBS firmware and voice messages must be updatable via Bluetooth Low Energy level 5 at a minimum. There should be no requirement for IC chips or module hardware to be removed or exchanged to complete a firmware or audio update.
- The PBS firmware should be updateable over the 2-wire interface from the CCU.
- The System should have a selectable option to mute sounds on all crosswalks except activated crosswalk.
- The System should have a real time clock capable of keeping time when there is no system power, for a minimum of 2 years from date of manufacture.
- The System should have the ability to have four separate program configurations with all features available, and any single configuration can be selected through an external input.
- The System should provide a user settable calendar function, allowing four separate configuration profiles to be configured to become active at different times of the day on a daily, weekly, or holiday basis.
- The entire System should be configurable from any PBS over Bluetooth Low Energy.
- The entire System should be configurable from the CCU over Wi-Fi or Ethernet.
- All field access to selectable options using Bluetooth Low Energy, Wi-Fi or Ethernet devices should be protected using password security.
- Each PBS should be capable of interacting with a pedestrian app on iOS or Android smart phones, via Bluetooth Low Energy.
- Touchless actuation option when ordered/included in PBS, should be capable of detecting movement within 1-4 inches to actuate/place ped call via the PBS.
- The touchless actuation option should be capable of adjusting the distance or range of

detection from 1-20 inches.

- The touchless actuation option should be capable of adjusting minimum wave detection time (amount of time that a wave must be performed before a call is activated). The setting times should be in milliseconds and be settable to 0ms, 50ms, 250ms, and 500ms.
- The touchless actuation option performance should not be impeded or affected by ice buildup on the push button station.
- The touchless actuation option – detection system should be inconspicuous and vandal resistant.

Central Control Unit (CCU) - The CCU is the control unit that provides data for the Push Button Stations. The CCU should be either a shelf mount (CCU-S) or card rack mount (CCU-C) assembly.

- The CCU-S should be installed inside the Traffic Cabinet and powered by the AC supply mains (115 VAC).
- The Central Control Unit powers the push button stations over the 2 wires and uses digital data including pedestrian interval information and pedestrian calls for each phase to communicate with each push button station over the two low voltage button wires.
- The CCU-C should be installed inside a 300 series Traffic Cabinet's Input File, replacing 2 PED isolator boards and receiving power from the rack (24VDC).
- The CCU-S should provide internal power to operate up to 16 PBS's.
- A 24-volt power brick should power up to 16 PBS's in a CCU-C configuration.
- The CCU should control at least 16 PBS's.
- The CCU should be logically configurable to assign any PBS to one of 16 traffic/PED phases.
- The CCU through SDLC should be able to place PED calls on up to 8 phases.
- The CCU-S should receive pedestrian phase Walk, Don't Walk and Clearance inputs from either the traffic cabinet load switches or an SDLC input.
- The CCU-C should receive pedestrian phase Walk, Don't Walk and Clearance inputs from a Transport Electrical Equipment Specification (TEES) C4S connector.
- The CCU should be able to self-test all PBS's and put a corresponding phase into recall should a PBS assigned to a phase fail the self-test.
- The CCU-S should provide optically isolated general-purpose inputs.
- The CCU-S should incorporate four separate cable assemblies to access all functions, so any combination of the four cable assemblies can be used to access any combination of functions.
- The CCU should have internal storage to log several thousand events with a date-time stamp for each event.
- The CCU should have an internal real-time clock capable of being set in the field and propagating the time to each connected PBS.
- The CCU firmware should be updatable via either Wi-Fi or Ethernet. There should be no requirement for IC chips or module hardware to be removed or exchanged in order to complete the firmware update.
- The CCU should be capable of updating the firmware of the connected APS buttons via the 2-wire interface.
- The CCU should monitor PED interval conflicts and set affected PBS's to an off/safe mode when a conflict occurs.
- The CCU-S should meet NEMA 250 – Type 1 enclosures requirements.
- The CCU should have a backlit LCD screen and button interface to allow placing test calls and display status.

Pedestrian Push Button Station (PBS) – The PBS allows the pedestrian to place calls to the Traffic Controller and provides vibro-tactile feedback during the Walk cycle. This equipment is typically mounted on a pole, near the start of the crossing.

- The PBS should be mounted to a pole by banding or bolting.
- The PBS should be a single fixture that contains a 2” activation area, in which resides an ADA compliant vibro-tactile push button with a raised directional tactile arrow, and a sign mounted above the button.
- The PBS Speaker should be 8 Ohms, 6 Watt, and weather-proof.
- The button should be cast aluminum, nickel-plated and powder coated black around the arrow, to provide high contrast to arrow color. The PBS arrow should allow for change in orientation to one of four directions.
- The PBS button actuation should use Hall Effect Sensor technology rated to greater than 20 million operations.
- The PBS button push force should have three adjustable pressure settings “Light, Medium, and Firm” over a range of approximately .5 LB to 3.5 LBS to activate a button push.
- The PBS button should pulse and vibrate at approximately 20 Hz with displacement factor based on pounds of force used to actuate.
- The PBS should have a rear facing speaker projecting sound from front and back, providing 360° omnidirectional sound performance.
- The PBS should include internal Conflict Monitoring that monitors WALK, and DON’T WALK input signals for conflict conditions; disables system operation and logs errors if conflict occurs.
- The PBS firmware and voice messages should be updatable via Bluetooth Low Energy. There should be no requirement for the hardware to be changed out to update.
- The PBS firmware should be updateable over the 2-wire interface from the CCU.
- The system should operate with the vendor’s client application to record and upload cumulative PED count & call data.
- The PBS should meet or exceed NEMA 250 type 4X enclosure requirements.
- The PBS Construction should be:
 - FRAME and BUTTON COVER: Cast Aluminum, Powder Coated.
 - HOUSING: Reinforced, UL-listed Thermoplastic.
 - MESSAGE SIGN: Aluminum, Powder Coated, Ink Markings, or Reflective Vinyl Sheeting
 - PUSH BUTTON: Aluminum, Nickel Plated, Powder Coated.
- Electronic circuits (printed circuit board assemblies) should be in a thermoplastic housing/enclosure having a UL94-V0 flammability rating. The housing/enclosure should provide NEMA 250 4X protection to all covered components.
- At time of order customer should be able to specify sign size, and Message Sign Markings to be either the International Walking Person or the Informational Explanations for the three (3) distinct pedestrian displays (WALK, DON’T WALK, and PED CLEARANCE) that a pedestrian would see on an active pedestrian signal.
- The PBS should be a modular design with a separate speaker compartment that can be field-replaced.
- A 2-Wire PBS should include a 3-position terminal block to support the capability of operating as a 3-Wire PBS (3-Wire Ped Head Based System) by adding a Control Unit in the pedestrian signal head that converts 115 VAC to 24VDC, and a 3 wire cable that carries power, data, and ground wires from Control Unit to the PBS.
- The PBS should have Bluetooth Low Energy communication that allows a pedestrian to use an app to get PED status information and place a PED call when in close proximity to a button, without having to touch/push the button.

Field Programming via Client Application (Apple iOS v9.0 or higher devices, or Android 5.0 or a PC with Windows 8 or 10)

- The System should use Bluetooth Low Energy 5 or higher technology to program firmware and audio voice messages, and to communicate to other buttons or external devices.
- The System should be password protected through the programming/configuration interface.
- The iOS, Android, and PC applications should be upgradable.
- The iOS, Android, and PC applications should notify the user when a newer version of the application is available.
- The iOS, Android, and PC applications should notify the user when newer PBS and CCU firmware is available.
- The iOS, Android, and PC applications should provide the mechanism to download the latest PBS and CCU firmware.
- The iOS, Android, and PC applications should be capable of setting all volumes and features of the APS system specific to the PBS's.
- The iOS, Android, and PC applications should be capable of setting/updating configuration options for a single PBS or all PBS's on the intersection for most functions from a single PBS or CCU. (Global updating).
- The iOS, Android, and PC applications should be capable of storing, modifying, loading, and emailing PBS configuration settings, audio files and health logs.

Span Wire Hanger (Items 37-38)

Aluminum Hardware

These items shall comply with the current GDOT Standard Specifications Section 925 with following additional requirements.

- Shall be provided with a "mill finish", but, if designated "black", shall be baked enamel black semi-gloss paint. 4" aluminum poles shall be provided with a brushed aluminum finish or black.
- Span wire hanger assembly shall be Pelco SE-5063 or equivalent and span clamp shall be Pelco SE-0321 or equivalent.

Sign Hanger Assembly (Item 44)

These items shall comply with the current GDOT Standard Specifications Section 925 with following additional requirements.

- Shall allow height adjustment by adding extender bars (not included). Adjustable sign hanger assembly includes extender bars to provide a 7" height adjustment.
- Sign blades attach to a 15" by 13" wide bracket, maximum 2" angle. Material shall be aluminum and fasteners shall be stainless steel.

Mast Arm Mounting Hardware (Items 46)

These items shall comply with the current GDOT Standard Specifications Section 925 with following additional requirements.

- Clamp kits for all heads and signs shall allow a secure rigid cable mounting of a traffic signal head to mast arm with a minimum 82" galvanized, steel cable included and adjustment to plumb the signal head.
- Arm kits will be one-way, vertical for 3 and 4 section heads and a cluster arrangement for 4 or 5 section heads.
- For signal heads, provide a slotted tube that shall be threaded on one end and be

provided with a vinyl insert to conceal wiring. The tube shall be provided in the following lengths.

- 37" for 4 or 5 section cluster head
- 46" for 3 section head
- 58" for 4 section head
- "Astro-brac" type clamp kit shall allow secure rigid cable mounting of 1 ½" tube to mast arms, with adjustment to plumb tube.

Mast arm mounting hardware for 3, 4 and 5-section signal heads and signs will be awarded together to a single low bidder.

Mast Arm Overhead Sign Bracke (Item 47)

These items shall comply with the current GDOT Standard Specifications Section 925 with following additional requirements.

Sign bracket shall be provided with mill finish but if designated black shall be baked enamel black semi-gloss.

Astro Sign Bracket shall be Pelco AG-0144 or equivalent and clamp kit shall be AG-3055 or equivalent.

Overhead signs dimensions are typically 18 inches high by 60 to 120 inches in length.

Loop Sealant (Item 53)

These items shall comply with the current GDOT Standard Specifications Section 925 with following additional requirements.

- Shall be provided in 1 liter tubes/cartridges with nozzles.
- Shall be provided with 12 tubes to a case.
- Shall be black or gray in color.

Traffic Signal Controller Bases (Items 54-56)

These items shall comply with the current GDOT Standard Specifications Section 925 with following additional requirements.

332 Cabinet Only

Shall have a minimum acceptable top dimension are 24" by 36" with a 18" depth. The throat size shall have a minimum size of 15" by 25". The precast traffic signal base shall be designed to withstand a load administered by a sustained wind velocity of 100 miles per hours. The precast base shall be designed to be nest able for ease of storage and shall be concrete gray in color. The base shall be made from a heavy-duty polymer concrete material. Test of the materials specimen samples shall meet or exceed the oollowing strength characteristics:

- Compressive Strength: 10,500 psi
- Tensile Strength: 1,500 psi
- Flexural Strength: 3,250

332 Cabinet and BBS Cabinet

Shall have a minimum acceptable top dimension are 40" by 44" with a 24" depth. The throat size shall have a minimum size of 15" by 25" for the signal cabinet and 7" by 18" for the BBS cabinet. The precast traffic signal base shall be designed to withstand a load administered

by a sustained wind velocity of 100 miles per hours. The precast base shall be designed to be nest able for ease of storage and shall be concrete gray in color. The base shall be made from a heavy-duty polymer concrete material. Test of the materials specimen samples shall meet or exceed the following strength characteristics:

- Compressive Strength: 10,500 psi
- Tensile Strength: 1,500 psi
- Flexural Strength: 3,250

CCTV Camera System, Type 1 Assembly, Complete (item 58)

Shall meet the requirements of section 936 of the 2021 GDOT Standard Specifications and section 936GW of the Gwinnett County Special Provisions to those standards. The Complete Assembly shall include a CCTV Camera, Type 1 with POE Injector.

Intersection Video Detection System & Components (Items 59a-c)

Video detection should satisfy the 2021 GDOT 937 specification, particularly sections 937.2.04 and 937.3.04.

Video Detection System, Complete will include all components and hardware required to provide detection of vehicle traffic on one intersection approach. It does not include the cabling between the surge suppression at the signal cabinet and the surge suppression at the camera mounting. The Complete System shall include the camera, cabinet components, surge protection, and mounting hardware.

Video Detection Camera will include a video camera sensor and all connectors needed to replace an existing video detection camera.

Video Detection System Processor shall include the cabinet components to support video detection.

Intersection Video Detection System & Components (Items 59d-e)

This special specification sets forth the minimum requirements for a Machine Learned based Video Imaging Vehicle Detection System (AI-VIVDS) that monitors vehicles on a roadway via processing of video images and provides detector outputs to a traffic controller or similar device. The camera must adhere to the latest statewide-approved VIVDS specification and be approved for vehicle detection. In the case of discrepancies, this specification should govern.

Camera Assembly: The complete camera or optical device assembly used to collect the visual image. The camera assembly consists of a Charged Coupled Device (CCD) camera, or Complimentary Metal Oxide Semiconductor (CMOS) camera, environmental enclosure, sun shield, and all necessary mounting hardware.

Live Video: Video output should be 15 to 30 frames per second.

Lux: The unit of light intensity used to determine the minimum and maximum values of light in which a camera may operate.

AI VIVDS Module: The Traffic computer unit that should have video analytics embedded which are designed for real-time detection tasks such as detection input for dynamic control of traffic signal lights, capturing detected object behavior movements, and the collection of traffic data from a video source

FUNCTIONAL REQUIREMENTS

Conform the system limiting resolution to FCC regulations for broadcast signals. Provide clear, low-bloom and low-lag video pictures under all conditions from bright sunlight to nighttime scene illumination.

CAMERA ASSEMBLY

As a minimum, each camera should be of solid-state design and provide the following capabilities:

- Camera must be able to provide video stream via all cable types (Cat 5e, Cat 6, 3 wire, 11 wire and Coax).
- Provide a color image. During night-mode, it may switch over to black and white for better contrast.
- Useable video and resolvable features in the video image should be produced when those features have luminance levels as low as 0.05 lux for black and white or as low as .01 lux for color for night use.
- Useable video and resolvable features in the video image should be produced when those features have luminance levels as high as 10,000 lux during the day. The camera must not sustain any permanent damage when pointed directly at strong light sources, including the sun, for brief periods of time.
- The camera should include an electronic shutter or auto-iris control based upon average scene luminance.
- The camera should not incorporate any mechanically adjustable zoom or focus elements which can move out of adjustment over time due to vibration. Digital zoom is acceptable.
- The camera should be capable of being set up and programmed in a bucket truck without the intersection's primary power. An optional battery powered monitor can be used to set up the cameras before any cables are pulled.

The camera and lens assembly should be housed in an environmental enclosure that provides the following capabilities:

- The enclosure should be waterproof and dusttight to the latest NEMA4 specifications.
- The camera and lens should be capable of operating in all weather conditions and able to withstand a wind load of 140 mph without permanent damage to mechanical or electrical equipment or loss of alignment.
- The camera's front lens cover should be easily replaceable without the use of special tools or the loss of warranty.
- The unit should provide strain relief for all cables (AC, DC, Coax, CAT5e, CAT6, control and camera cables).
- The camera will be designed to allow up to two cameras to be mounted on a single U-bracket. The camera should also be capable of being mounted directly to a mast arm or luminaire arm by only using strapping material.
- The enclosure should allow the camera to operate satisfactorily over an ambient temperature range from -40°F to 165°F while exposed to precipitation as well as direct sunlight.
- The maximum power consumption under all conditions should be 4W.
- The camera enclosure should also include a sun shield to minimize glare. The front edge of the sunshield should protrude beyond the front edge of the environmental enclosure and should include a provision to divert water flow to the sides of the sun shield to avoid icicles from forming and blocking the view during freezing conditions.

- All materials used in the enclosures and cables should include ultraviolet inhibitors.
- When operating in the environmental enclosure with power and video signal cables connected, the image sensor should meet FCC class B requirements for electromagnetic interference emissions.
- The lens should require low maintenance (under average conditions). The camera lens should not require cleaning more than once a year.
- The camera should not require a heater to keep the lens free from fog, ice and snow accumulations.
- The camera should have Wide Dynamic Range (WDR) capabilities to further enhance performance under difficult lighting conditions.
- The camera should be capable of receiving a 20,000V high voltage surge without damage.
- The camera options should incorporate both a standard Ethernet or BNC connection. The connectors should be fully enclosed inside a weatherproof traffic signal housing (NEMA-4 enclosure) with strain reliefs to protect against premature failure due to wind, vibration, hail, snow, ice, water or other weather-related elements.

- All connections should enter the NEMA-4 enclosure from the bottom of the enclosures to reduce the chance of water leakage into the enclosures.

The camera should meet TS2 cabinet specifications for both environmental and electrical performance

The total weight of the camera in the environmental enclosure should be 2.5 pounds or less.

AI VIVDS MODULE REQUIREMENTS

As a minimum, each AI-VIVDS module should be of solid-state design and provide the following capabilities:

- Should accept either Analog or Digital video input.
- Should be IP addressable and communicate over Ethernet TCP/IP protocol for remote monitoring
- Should accurately detect road users from thermal, fisheye, analog and POE cameras either directly or via converter.
- Should provide the ability to place, and clear, calls to traffic signal detector channels using multiple interfaces including (but not limited to): SDLC, contact closure, Ethernet message (webhook), or NTCIP 1202 messages
- Should provide the ability to place, and clear, calls for 16 phases per 4x BIU equivalent for each controlled traffic signal controller or 64 channels via NTCIP 1202
- Should provide the ability to interface to various NEMA TS-2 or ATC traffic signal controllers independent of brand using standard interfaces above
- Should provide the ability to manually call, and clear, detector channels and phases for the purpose of testing or manual control
- Should provide an interface for external services to interface with a traffic signal controller through a secured HTTP, REST, UDP, or Webhook API
- Should support video streaming for various video management servers such as NxGo, Genetec, or Milestone.
- Should communicate to a V2X RSU using TCP/IP protocol, NTCIP 1218 or J2735
- Should be able to provide fully EU General Data Protection Regulation (GDPR) privacy compliant data results and video streams to protect individual privacy regardless of video source provided as input, including legacy camera feeds with no privacy provision

- Should provide additional database features via PostgreSQL for historical evidence and snapshot recording for such things near miss or other event related capture and storage
- Should process a minimum of (6) camera inputs simultaneously in real time.
- The ability to adequately provide stop bar and advanced detection using as few as 2 cameras at a typical 4-way intersection.
- Should provide lane occupancy (the duration of time a vehicle has occupied the detection area historically referenced to a 6ftx6ft loop), minimum, maximum, and average occupancy time (in milliseconds), or occupancy as a percentage of time in a reference zone by lane, approach, and zone
- Should be capable of determining Traffic violations illegal U-turn, illegal lane changes, and Red-light violation, or stopped vehicle and parking issues
- The detection system should be able to detect user defined near-miss collision data via selectable filter criteria for Post Encroachment Time (PET)
- Motorcycle to bicycle accuracy must be 95% or above.
The ability to detect and classify a minimum of 17 road users including car, car trailer, van, light, heavy, motorcycle, bicycle, scooter, pedestrian, baby carriage, animal (medium sized dog and larger), tram, tractor, and other classifications.
- The system should be fully interactive and respond to a new field of view objectives and/or configuration settings instantly with no adaptation period required.
- The ability to provide wrong-way vehicle detection and reporting with 99% accuracy.
- Advanced detection capabilities up to 1,000 feet while simultaneously performing stop bar detection, classification, queue, speed, left hand turn counts plus total vehicle counts from a single camera.
- Should be set up via laptop PC at the intersection or remotely at a TMC/TOC.
- Software should be upgradable both remotely or in the field.
- Capable of queue data to 1,000 ft.
- Should not require minimum nor maximum number of detection zones per approach.
- Should be able to accurately count, classify and detect bicycles in the same zone as other vehicles.
- Meets TS2 Electrical/Environmental cabinet specs.
- Must be able to process H264 and H265 compressed video.
- Data storage should be collected in a rotating memory buffer and not be cloud based.
Should retain its programming in nonvolatile memory
- Should allow a user to edit previously defined configuration parameters and store these parameters for future uploading to the device(s).
- Vehicle count performance should be documented by 3rd party to be greater than 98% accurate under all weather conditions.
- Software must have a minimum ten years of training for machine-learning neural network.
- System must have open API for a user's independent, third-party software development
- Should provide optional interfaces for data collection to data aggregating services such as MS2, Drakewell, or Kenetic Mobility.
- Should be able to provide statistical data about traffic events in different aggregation modes such as whole history, time blocks, floating time windows or at defined time intervals

- Historical data together with the real-time detected events should be available via open
- APIs for 3rd parties or exported in various formats
- Should be able to determine traffic signal state by color if available within the respective camera FOV
- Should place (constant) calls on detector channels and phases when associated detectors fail

Surge Suppression/Termination

A surge suppression panel will provide 20kA surge current capacity.

INSTALLATION AND TRAINING

- If requested, the supplier of the video camera and digital AI module should supervise the installation and testing of the equipment. The supplier will provide a factory-certified representative from the supplier to be present onsite during installation.
- Up to two days of training should be provided to personnel of TxDOT in the operation, setup, and maintenance of the camera. Instruction and materials should be provided for a maximum of 20 people and should be conducted at a location selected by the agency.
- Instructional personnel are required to be certified by the equipment manufacturer. The User's Guide is not an adequate substitute for practical and classroom training, and formal certification by an approved agency. The supplier should also provide installation and training material via the internet.

WARRANTY, MAINTENANCE AND SUPPORT

- The camera should be warranted to be free of defects in material and workmanship for a period of 2 years from date of shipment from the supplier's facility. During the warranty period, the supplier should repair with new or refurbished materials, or replace at no charge, any product containing a warranty defect provided the product is returned FOB to the supplier's factory or authorized repair site. Products repaired or replaced under warranty by the supplier will be returned with shipping prepaid. This warranty does not apply to products damaged by accident, improper operation, abused, or unauthorized modification.
- Technical support should be available from the supplier via telephone within 4 hours of the time a call is made by a user, and this support should be available from factory-certified personnel or factory-certified installers.
- An optional cellular support tool - or equivalent, should be provided as needed to assist with real-time field training and trouble shooting.
- The supplier should maintain a program for technical support and software updates following expiration of the warranty period. This program should be made available to TxDOT in the form of a separate agreement for continuing support.
- The supplier should maintain an adequate inventory of parts to support maintenance and repair of the cameras.
- Each unit should be permanently labeled with Serial Number, Model Number, and Date Code. If the Date Code is incorporated in the Serial Number, the Date Code may be omitted.

Broadband (5.8 GHz) Wireless Ethernet Radio System (Item 60)

Shall meet the requirements of section 926 of the 2021 GDOT Standard Specifications and section 926GW of the Gwinnett County Special Provisions to those standards. The Complete System shall include the following equipment:

- Broadband (5.8 GHz) Wireless Ethernet Radio with Integrated Dual Polarity Antenna
- POE Injector
- Any special connectors or adaptors needed to connect a CAT6 cable to the radio

Microwave Radar Intersection Vehicle Detection Equipment (Items 61)

Microwave radar detection should satisfy the 2021 GDOT 937 specification, particularly sections 937.2.05 and 937.3.05.

- Both stop bar presence detection systems and setback detection systems must be supplied.
- Each cabinet interface device shall come equipped for Ethernet network access remotely from the Gwinnett County Traffic Control Center.
- The warranty for radar products is a minimum of 12 months from installation with a preference for 24 months.
- For Radar detection systems, GCDOT prefers products that are included in the current GDOT QPL.

Microwave Vehicle Detection System, Complete will include all components and hardware required to provide detection of vehicle traffic on one intersection with four approaches. The Complete System shall include the emitter, cabinet components, surge protection, 1000' of black outdoor-rated factory-terminated cable, and mounting hardware.

Microwave Vehicle Detection Emitter (setback) will include a sensor and all connectors needed to replace an existing setback microwave radar detection emitter.

Microwave Vehicle Detection Emitter (stop bar) will include a sensor and all connectors needed to replace an existing stop bar microwave radar detection emitter.

Microwave Vehicle Detection System Processor shall include the associated cabinet components to support microwave radar detection.

Training

Gwinnett County Department of Transportation requests training with the purchase of no fewer than 10 of each of the following items:

- | | |
|--------------------------------------|---|
| • 332 Cabinet | 8 hours of training for up to 25 people |
| • 2070LX controller and firmware | 8 hours of training for up to 25 people |
| • Conflict Monitor | 4 hours of training for up to 25 people |
| • Loop Detector Card | 4 hours of training for up to 25 people |
| • Battery Backup System | 4 hours of training for up to 25 people |
| • Solar flasher cabinet assembly | 4 hours of training for up to 25 people |
| • Video Detection System | 4 hours of training for up to 25 people |
| • Broadband Radio System | 4 hours of training for up to 25 people |
| • Microwave Vehicle Detection System | 2 hours of training for up to 25 people |
| • Radar feedback signs | 2 hours of training for up to 25 people |

ITEM #	APPROX ANNUAL QTY	DESCRIPTION	REFERENCE MANUFACTURER/ PART #	MANUFACTURER/ PART # OF SPEC ITEM OR EQUIVALENT OFFERED	DELIVERY ARO	UNIT PRICE	TOTAL
1		Traffic Signal Complete Cabinet (with training)					
a	10 EA	332A				\$	\$
b	5 EA	Quad 332 Split Door				\$	\$
2	15 EA	DC Isolator for 332A Cabinet				\$	\$
3	10 EA	Model 206 power supply for 332A Cabinet				\$	\$
4	2 EA	336S Pole mount Cabinet				\$	\$
5	10 EA	Auxiliary Output File (Does not include additional Load Switch / Switch Packs)				\$	\$
6	25 EA	2070 LX Controller with current GDOT firmware (with training)				\$	\$
7	50 EA	2070 1C Module with current GDOT firmware (with training)				\$	\$
8	50 EA	2070-4 Power Supply Module				\$	\$
9		Field I/O Module					
a	30 EA	2070-2A				\$	\$
b	30 EA	2070-2E				\$	\$
c	30 EA	2070-2E+				\$	\$
10	30 EA	Load Switch, NEMA/170/2070 compatibility with input/output LED's	PDC SSS-86			\$	\$
11	10 EA	Flasher, 2 circuit NEMA/170 compatibility	EDI 810			\$	\$
12	50 EA	Standard Cabinet Flash Transfer Relay					
13	5 EA	Surge protector, 120 volt AC, Single Phase Filter	EDCO SHA-1250			\$	\$
14		Signal conflict monitor with event logging, Ethernet capable					
a	10 EA	Monitor (w/ training)	EDI 2018 KCLip (or approved equivalent)			\$	\$
b	25 EA	Monitor w/Program Tool (w/ training)	EDI 2018 KCLip w/ Eberle Design MonitorKey			\$	\$

Company Name_____

ITEM #	APPROX ANNUAL QTY	DESCRIPTION	REFERENCE MANUFACTURER/ PART #	MANUFACTURER/ PART # OF SPEC ITEM OR EQUIVALENT OFFERED	DELIVERY ARO	UNIT PRICE	TOTAL
c	100 EA	Datakey	Datakey Electronics Datakey for 2018KCL			\$	\$
15	30 EA	Loop detector, 2 channel rack mount, LCD display, programmable, scanning (with training)				\$	\$
16	2 EA	Battery Backup System Cabinet with external generator hookup				\$	\$
17	5 EA	Battery Backup System, Complete				\$	\$
18	2 EA	Battery Backup System controller, equipped with Ethernet comm. module				\$	\$
19	50 EA	Battery 12vdc, not less than 68 amp hrs, AGM	Power Battery CO. (TG-1265C) or Alpha Tech. (160AGM)			\$	\$
20		Beacon Cabinet Assembly					
a	5 EA	Standard AC				\$	\$
b	5 EA	Standard Solar Powered				\$	\$
c	5 EA	School Standard AC				\$	\$
d	5 EA	School Solar Powered				\$	\$
21	5 EA	Solar Battery, 12 vdc				\$	\$
22	5 EA	Solar Panel				\$	\$
23	30 EA	Morningstar Control Board Assembly for Solar Flasher				\$	\$
24	30 EA	Pelco Solar Assembly Controls				\$	\$
25	30 EA	Omron Clock	H3CA-A			\$	\$
26		Rectangular Rapid-Flashing Beacon (RRFB)					
a	5 EA	Single Solar Assembly				\$	\$
b	5 EA	Single AC Assembly				\$	\$
c	5 EA	Back to Back Solar Assembly				\$	\$
d	5 EA	Back to Back AC Assembly				\$	\$
e	10 EA	Amber Light Bar				\$	\$

Company Name _____

ITEM #	APPROX ANNUAL QTY	DESCRIPTION	REFERENCE MANUFACTURER/ PART #	MANUFACTURER/ PART # OF SPEC ITEM OR EQUIVALENT OFFERED	DELIVERY ARO	UNIT PRICE	TOTAL
f	5 EA	Cabinet and Solar Panel Assembly				\$	\$
g	10 EA	Pushbutton Assembly, low voltage				\$	\$
h	5 EA	W16-7PR or W16-7PL, 24"x12"				\$	\$
27		Signal head, No lenses or reflectors, Black with tunnel visors					
a	100 EA	3-section 12" black polycarbonate	McCain M22435			\$	\$
b	25 EA	4-section 12" black polycarbonate	McCain M30083			\$	\$
28		Backplate, with 2" reflective border					
a	100 EA	one piece ABS 3-section 12"				\$	\$
b	25 EA	one piece ABS 4-section 12"				\$	\$
c	5 EA	ABS 4-section 12" "T" w/PELCO SE-5059				\$	\$
d	5 EA	ABS 5-section 12" cluster w/PELCO SE-5059				\$	\$
29		High intensity/sway LED traffic signal modules					
a	250 EA	green ball, per specifications				\$	\$
b	250 EA	yellow ball, per specifications				\$	\$
c	250 EA	red ball, per specifications				\$	\$
d	100 EA	green arrow, per specifications				\$	\$
e	100 EA	yellow arrow, per specifications				\$	\$
f	100 EA	red arrow, per specifications				\$	\$
g	100 EA	bimodal arrow, flashing yellow arrow/green arrow, per specifications				\$	\$
h	100 EA	green u-turn arrow, per specifications				\$	\$
i	100 EA	yellow u-turn arrow, per specifications				\$	\$
j	100 EA	red u-turn arrow, per specifications				\$	\$
k	100 EA	bimodal u-turn arrow, flashing yellow u-turn arrow/green u-turn arrow, per specifications				\$	\$
30	10 EA	LED traffic signal module, 12 volt DC, yellow ball				\$	\$
31	25 EA	Countdown LED pedestrian signal module, hand/man symbol				\$	\$

Company Name _____

ITEM #	APPROX ANNUAL QTY	DESCRIPTION	REFERENCE MANUFACTURER/ PART #	MANUFACTURER/ PART # OF SPEC ITEM OR EQUIVALENT OFFERED	DELIVERY ARO	UNIT PRICE	TOTAL
32	50 EA	Pedestrian signal head, Complete - black 1-section with Countdown LED hand/man symbol				\$	\$
33	25 EA	Clamshell 2 mount, black	US Traffic Corp. 4805			\$	\$
34	25 EA	Pedestrian 1-way poly bracket assembly	UKS1452AB			\$	\$
35		Pedestrian Pushbutton Setup					
a	50 EA	Pedestrian pushbutton station, black 9" x 15" with Vandal resistant, piezo switch button per specs installed				\$	\$
b	50 EA	Vandal resistant Pedestrian pushbutton with piezo switch and adaptors, per specifications				\$	\$
c	25 EA	9" x 15" pushbutton sign - countdown legend with right arrow				\$	\$
d	25 EA	9" x 15" pushbutton sign - countdown legend with left arrow				\$	\$
e	50 EA	Pushbutton standoff kit, black, A1, 9x15 to 4.5 pole P2	Traffic Parts, Inc.			\$	\$
f	25 EA	Double pushbutton station adaptor, black	PELCO 6042, P33			\$	\$
36		Accessible Pushbutton Setup					
a	30 EA	Complete Intersection System (8 Buttons)				\$	\$
b	20 EA	Pedestrian Pushbuttons				\$	\$
c	20 EA	Pedestrian Signs				\$	\$
37	20 EA	Spanwire signal hanger assy., tri-stud black	PELCO SE-5089			\$	\$
38	10 EA	Spanwire clamp	PELCO SE-0321			\$	\$
39	20 EA	Signal closure cap, black, aluminum or polycarbonate, w/locknut 1 1/2" X 7/8"	PELCO SE-0499			\$	\$
40	10 EA	Cabinet mounting assembly, 4" pole	PELCO SE-1100			\$	\$
41	10 EA	Sign mount assembly, U-bolt, 4" pole	PELCO SH-0209			\$	\$
42	10 EA	2-way upper/lower tri-stud arm assembly., black	PELCO SE-5061			\$	\$

Company Name _____

ITEM #	APPROX ANNUAL QTY	DESCRIPTION	REFERENCE MANUFACTURER/ PART #	MANUFACTURER/ PART # OF SPEC ITEM OR EQUIVALENT OFFERED	DELIVERY ARO	UNIT PRICE	TOTAL
43	25 EA	Pedestal Flange Base/Galv. Iron	PB-5304 (10.2LB)			\$	\$
44	20 EA	Sign hanger assembly for span wire	PELCO SE-5046-25			\$	\$
45	110 EA	Astro Sign-Brac, Galaxy Cable Mount for Overhead Street Name Signs for 120" sign blade					
a	EA	PNC	PELCO AG-0144-114-120, PNC			\$	\$
b	EA	Gloss black	PELCO AG-0144-114-120, P33			\$	\$
46		Mast arm mounting assembly					
a	10 EA	3-section with 46" tube, PNC	PELCO AG-0125-3-96, PNC			\$	\$
b	10 EA	3-section with 46" tube, Gloss black	PELCO AG-0125-3-96, P33			\$	\$
c	5 EA	4-section with 58" tube, PNC	PELCO AG-0125-4-96, PNC			\$	\$
d	5 EA	4-section with 58" tube, Gloss black	PELCO AG-0125-4-96, P33			\$	\$
e	10 EA	5-section with 37" tube, PNC	PELCO AG-0138-96, PNC			\$	\$
f	10 EA	5-section with 37" tube, Gloss black	PELCO AG-0138-96, P33			\$	\$
g	10 EA	10' Gusset Tube, PNC	AB-2003-120, PNC			\$	\$
h	10 EA	10' Gusset Tube, Gloss black	AB-2003-120, P33			\$	\$
47	10 EA	Clamp Kit for mast arm attachments, 96" minimum cable length	PELCO AG-3055-96, PNC			\$	\$
48		Square base pedestrian pole assembly					
a	50 EA	PNC	PELCO PB-5334			\$	\$
b	50 EA	Gloss black	PELCO PB-5334, P33			\$	\$
49		Spun aluminum pole shaft					
a	10 EA	4"x5', mill finish, PNC	PELCO PB-5100-5', PNC			\$	\$

Company Name _____

ITEM #	APPROX ANNUAL QTY	DESCRIPTION	REFERENCE MANUFACTURER/ PART #	MANUFACTURER/ PART # OF SPEC ITEM OR EQUIVALENT OFFERED	DELIVERY ARO	UNIT PRICE	TOTAL
b	5 EA	4"x5', gloss black	PELCO PB-5100-5', P33			\$	\$
c	20 EA	4"x10', mill finish, PNC	PELCO PB-5100-10', PNC			\$	\$
d	10 EA	4"x10', gloss black	PELCO PB-5100-10', P33			\$	\$
e	20 EA	4"x14', mill finish, PNC	PELCO PB-5100-14', PNC			\$	\$
f	5 EA	4"x14', gloss black	PELCO PB-5100-14', P33			\$	\$
50		Post cap, 4" acorn					
a	25 EA	PNC	PELCO PB-5401, PNC			\$	\$
b	20 EA	Gloss black	PELCO PB-5401, P33			\$	\$
51		Pole collar assembly					
a	25 EA	PNC	PELCO PB-5325, PNC			\$	\$
b	20 EA	Gloss black	PELCO PB-5325, P33			\$	\$
52	15 EA	Streetlight foundation, 6"x5',9-14"bc	Chance C11232JG4VL			\$	\$
53	25 EA	Loop sealant, 1 liter ply pack tube, 12 tubes per case (black or gray)	3M loop sealant			\$	\$
54	25 EA	Footpad 24" x 36" composite	Quazite PH243600002T			\$	\$
55	5 EA	Precast cabinet base for 332 cabinet only	Quazite PB24360612B18			\$	\$
56	15 EA	Precast cabinet base for 332 and BBS cabinets	Quazite PB40441323A24			\$	\$
57		Pullbox					
a	5 EA	Type 1, Cover Only 12x12 w/ "TRAFFIC SIGNAL" logo	Quazite PC1212HA0046			\$	\$
b	10 EA	Type 2, Cover only 13x24 w/ "TRAFFIC SIGNAL" logo	Quazite PG1324HA0046			\$	\$

Company Name_____

ITEM #	APPROX ANNUAL QTY	DESCRIPTION	REFERENCE MANUFACTURER/ PART #	MANUFACTURER/ PART # OF SPEC ITEM OR EQUIVALENT OFFERED	DELIVERY ARO	UNIT PRICE	TOTAL
c	3 EA	Type 3, Cover only 17x30 w/ "TRAFFIC SIGNAL" logo	Quazite PG1730HA0046			\$	\$
d	10 EA	Type 4, Cover only 24x36 w/ "TRAFFIC SIGNAL" logo	Quazite PG2436HA0046			\$	\$
e	5 EA	Type 4, Cover only 24x36 w/ "GWINNETT DOT" logo	Quazite PG2436HA00E91			\$	\$
f	5 EA	Type 5, Cover only 30x48, Split lid w/ "GWINNETT DOT" logo	Quazite PG3048HS00E91			\$	\$
g	5 EA	Type 1, 12"x12"x12" composite box assembly w/ locking cover w/ "TRAFFIC SIGNAL" logo	Quazite PC1212Z50346			\$	\$
h	25 EA	Type 2, 13"x24"x12" composite box assembly w/ locking cover w/ "TRAFFIC SIGNAL" logo	Quazite PG1324Z53446			\$	\$
i	15 EA	Type 3, 17"x30"x12" composite box assembly w/ locking cover w/ "TRAFFIC SIGNAL" logo	Quazite PG1730Z53946			\$	\$
j	25 EA	Type 4, 24"x36"x36" composite stacked box assembly w/ locking cover w/ "TRAFFIC SIGNAL" logo	Quazite PG2436Z54446			\$	\$
k	25 EA	Type 4S, 24"x36"x18" composite box assembly w/ locking cover w/ "GWINNET DOT" logo	Quazite PG2436Z719E91			\$	\$
l	5 EA	Type 5, 30"x48"x36" composite stacked box assembly w/ locking split lid cover w/ "GWINNETT DOT" logo	Quazite PG3048Z791E91			\$	\$
m	2 EA	Type 7, 30"x48"x36" composite box assembly w/ locking split lid cover w/ "GWINNETT DOT" logo	Quazite PG3048Z914E91			\$	\$
58	10 EA	CCTV Camera System, Type 1 Assembly, Complete	Axis Q6075			\$	\$
59		Intersection Video Detection					
a	5 EA	Complete 6 camera system				\$	\$
b	5 EA	Camera assembly				\$	\$
c	5 EA	Detection processor				\$	\$
d	5 EA	Complete 2 camera wired system	ITSP-V600-AI			\$	\$
e	5 EA	Complete 2 camera wireless system	ITSP-POEW-4			\$	\$
f	10 EA	Suppression	EDCO CX06-M			\$	\$

Company Name _____

ITEM #	APPROX ANNUAL QTY	DESCRIPTION	REFERENCE MANUFACTURER/ PART #	MANUFACTURER/ PART # OF SPEC ITEM OR EQUIVALENT OFFERED	DELIVERY ARO	UNIT PRICE	TOTAL
60	5 EA	Broadband (5.8 GHz) Wireless Ethernet Radio System, Complete				\$	\$
61		Microwave Vehicle Detection					
a	10 EA	System, Complete				\$	\$
b	5 EA	Emitter (setback)	Wavetronix Advance SS-200			\$	\$
c	5 EA	Emitter (stop bar)	Wavetronix Matrix SS-225			\$	\$
d	5 EA	System Processor	Wavetronix Click 650/656			\$	\$
62		Luminaire Arm					
a	5 EA	10 ft, aluminum				\$	\$
b	5 EA	15 ft, aluminum				\$	\$
c	5 EA	20 ft, aluminum				\$	\$
63	100 EA	3/4" Ground rod				\$	\$
64	100 EA	Down guy anchor rods 7ft				\$	\$
65	100 EA	8" anchor bell (5/8" & 3/4" rod)	#			\$	\$
66	50 EA	Universal telescoping pedestrian pushbutton extension bracket w/ 90-degree adapter	503-0241M w/ 503-0192			\$	\$
67	50 EA	Vibration dampers				\$	\$
TOTAL:						\$	

Gwinnett County requires pricing to remain firm for the duration of the initial term of the contract. Failure to hold firm pricing for the initial term of the contract will be sufficient cause for Gwinnett County to declare quote non-responsive. Contract to begin upon award.

If a percentage increase will be a part of this bid, please note this in the space provided together with an explanation.

Renewal Option 1: _____ % Increase _____ % Decrease (Explanation: _____)

Renewal Option 2: _____ % Increase _____ % Decrease (Explanation: _____)

Renewal Option 3: _____ % Increase _____ % Decrease (Explanation: _____)

Renewal Option 4: _____ % Increase _____ % Decrease (Explanation: _____)

Company Name _____

Termination for Cause: The County may terminate this agreement for cause upon ten days prior written notice to the contractor of the contractor's default in the performance of any term of this agreement. Such termination shall be without prejudice to any of the County's rights or remedies by law.

Termination for Convenience: The County may terminate this agreement for its convenience at any time upon 30 days written notice to the contractor. In the event of the County's termination of this agreement for convenience, the contractor will be paid for those services actually performed. Partially completed performance of the agreement will be compensated based upon a signed statement of completion to be submitted by the contractor, which shall itemize each element of performance.

Certification of Non-Collusion in Bid Preparation _____
Signature Date

In compliance with the attached specifications, the undersigned acknowledges all requirements outlined in the "Instructions to Bidders" and all documents referred to therein, if this bid is accepted by the Board of Commissioners within ninety (90) days of the date of proposal opening, to furnish any or all of the items upon which prices are quoted, at the price set opposite each item, delivered to the designated point(s) within the time specified in the fee schedule. By submission of this proposal, I understand that Gwinnett County uses Electronic Payments for remittance of goods and services. Vendors should select their preferred method of electronic payment upon notice of award. For more information on electronic payments, please refer to the [Electronic Payment](#) information in the instructions to bidders.

Legal Business Name _____
(If your company is an LLC, you must identify all principals to include addresses and phone numbers in your submittal)

Federal Tax ID _____

Address _____

Does your company currently have a location within Gwinnett County? Yes No

Representative Signature _____ Printed Name _____

Telephone Number _____ Fax Number _____ E-mail address _____

Company Name _____

REFERENCES

Provide at least three (3) references for which your firm has provided similar services. For each reference include the name and address of the customer; the period of service, the approximate yearly value; and the name and phone number of a contact person who is knowledgeable of the scope of your company's services and the quality of your performance.

1. Customer Name _____

Period of Service _____

Approximate Annual \$ Value _____

Contact Person _____ Telephone _____

E-Mail Address _____

2. Customer Name _____

Period of Service _____

Approximate Annual \$ Value _____

Contact Person _____ Telephone _____

E-Mail Address _____

3. Customer Name _____

Period of Service _____

Approximate Annual \$ Value _____

Contact Person _____ Telephone _____

E-Mail Address _____

Company Name _____



Bid # BL084-25, Purchase of Traffic Signal Electrical Equipment, Material, and Line Hardware on an Annual Contract

CODE OF ETHICS AFFIDAVIT

PLEASE RETURN THIS FORM COMPLETED WITH YOUR SUBMITTAL. SUBMITTED FORMS ARE REQUIRED PRIOR TO EVALUATION.

In accordance with Section 54-33 of the Gwinnett County Code of Ordinances the undersigned bidder/proposer makes the following full and complete disclosure under oath, to the best of their knowledge, of the name(s) of all elected officials whom it employs or who have a direct or indirect pecuniary interest in or with the vendor, its affiliates or its subcontractors:

1. _____
Company Submitting Bid/Proposal

- 2. Please select one of the following:
 - No information to disclose (*complete only section 4 below*)
 - Disclosed information below (*complete section 3 & section 4 below*)

3. If additional space is required, please attach list:

Gwinnett County Elected Official Name

Gwinnett County Elected Official Name

Gwinnett County Elected Official Name

Gwinnett County Elected Official Name

4. BY: _____
Authorized Officer or Agent Signature

Sworn to and subscribed before me this

Printed Name of Authorized Officer or Agent

_____ day of _____, 20____

Title of Authorized Officer or Agent of Contractor

Notary Public

(seal)

Note: See Gwinnett County Code of Ethics Ordinance EO2011, Sec. 54-33. The ordinance will be available to view in its' entirety at **GwinnettCounty.com**

FAILURE TO RETURN THIS PAGE MAY RESULT IN REMOVAL OF YOUR COMPANY FROM COMMODITY LISTING.

BL084-25

Buyer's Initials: MM

IF YOU DESIRE TO SUBMIT A "NO BID" IN RESPONSE TO THIS PACKAGE, PLEASE INDICATE BY CHECKING ONE OR MORE OF THE REASONS LISTED BELOW AND EXPLAIN.

- Do not offer this product or service; remove us from your bidder's list for this item only.
- Specifications too "tight"; geared toward one brand or manufacturer only.
- Specifications are unclear.
- Unable to meet specifications
- Unable to meet bond requirements
- Unable to meet insurance requirements
- Our schedule would not permit us to perform.
- Insufficient time to respond.
- Other

COMPANY NAME _____

AUTHORIZED REPRESENTATIVE _____

SIGNATURE

*****ATTENTION*****

FAILURE TO RETURN THE FOLLOWING DOCUMENTS MAY RESULT IN BID BEING DEEMED NON-RESPONSIVE AND AUTOMATIC REJECTION:

1. FAILURE TO USE COUNTY BID SCHEDULE.
2. FAILURE TO RETURN APPLICABLE COMPLIANCE SHEETS/SPECIFICATION SHEETS.
3. FAILURE TO RETURN APPLICABLE ADDENDA.
4. FAILURE TO PROVIDE INFORMATION ON ALTERNATES OR EQUIVALENTS.
5. THE COUNTY SHALL BE THE SOLE DETERMINANT OF TECHNICALITY VS. NON-RESPONSIVE BID.
6. FAILURE TO PROVIDE BID BOND, WHEN REQUIRED, WILL RESULT IN BID BEING DEEMED NON-RESPONSIVE AND AUTOMATIC REJECTION. BID BONDS ARE NOT REQUIRED ON ALL BIDS. BOND REQUIREMENTS ARE CLEARLY STATED ON THE INVITATION TO BID. IF YOU NEED CLARIFICATION, CONTACT THE PURCHASING ASSOCIATE. **IF BONDS ARE REQUIRED, FORMS WILL BE PROVIDED IN THIS BID DOCUMENT.**
7. FAILURE TO PROVIDE CONTRACTOR AFFIDAVIT AND AGREEMENT, WHEN REQUIRED, MAY RESULT IN BID BEING DEEMED NON-RESPONSIVE AND AUTOMATIC REJECTION. CONTRACTOR AFFIDAVIT AND AGREEMENT IS NOT REQUIRED ON ALL BIDS. IF YOU NEED CLARIFICATION, CONTACT THE PURCHASING ASSOCIATE.

**GWINNETT COUNTY
DEPARTMENT OF FINANCIAL SERVICES – PURCHASING DIVISION**

GENERAL INSTRUCTIONS FOR VENDORS, TERMS AND CONDITIONS

*****ATTENTION*****

FAILURE TO RETURN THE FOLLOWING DOCUMENTS MAY RESULT IN SUBMITTAL BEING DEEMED NON-RESPONSIVE AND AUTOMATIC REJECTION. THE COUNTY SHALL BE THE SOLE DETERMINANT OF TECHNICALITY VS. NON-RESPONSIVE SUBMITTAL:

8. FAILURE TO USE COUNTY FEE SCHEDULE.
9. FAILURE TO RETURN OR ACKNOWLEDGE APPLICABLE COMPLIANCE/SPECIFICATION SHEETS.
10. FAILURE TO RETURN OR ACKNOWLEDGE APPLICABLE ADDENDA.
11. FAILURE TO PROVIDE INFORMATION ON ALTERNATES OR EQUIVALENTS.
12. FAILURE TO PROVIDE BID BOND, WHEN REQUIRED, WILL RESULT IN SUBMITTAL BEING DEEMED NON-RESPONSIVE AND AUTOMATIC REJECTION. BID BONDS ARE NOT REQUIRED ON ALL SOLICITATIONS. BOND REQUIREMENTS ARE CLEARLY STATED ON THE INVITATION PAGE. IF CLARIFICATION IS NEEDED, CONTACT THE PURCHASING ASSOCIATE LISTED IN THE INVITATION. **IF BONDS ARE REQUIRED, FORMS WILL BE PROVIDED IN THIS SOLICITATION DOCUMENT.**
13. FAILURE TO PROVIDE CONTRACTOR AFFIDAVIT AND AGREEMENT, WHEN REQUIRED, MAY RESULT IN SUBMITTAL BEING DEEMED NON-RESPONSIVE AND REJECTED. THE CONTRACTOR AFFIDAVIT AND AGREEMENT IS NOT REQUIRED ON ALL SOLICITATIONS. IF CLARIFICATION IS NEEDED, CONTACT THE PURCHASING ASSOCIATE LISTED IN THE INVITATION.
14. FAILURE TO PROVIDE AN ETHICS AFFIDAVIT WHEN REQUIRED, MAY RESULT IN SUBMITTAL BEING DEEMED NON-RESPONSIVE AND REJECTED. THE ETHICS AFFIDAVIT IS REQUIRED ON ALL FORMAL SOLICITATIONS OVER \$100,000.00. IF CLARIFICATION IS NEEDED, CONTACT THE PURCHASING ASSOCIATE LISTED IN THE INVITATION.

**GWINNETT COUNTY
DEPARTMENT OF FINANCIAL SERVICES – PURCHASING DIVISION**

GENERAL INSTRUCTIONS FOR VENDORS, TERMS AND CONDITIONS

*****ATTENTION*****

FAILURE TO RETURN THE FOLLOWING DOCUMENTS MAY RESULT IN SUBMITTAL BEING DEEMED NON-RESPONSIVE AND AUTOMATIC REJECTION. THE COUNTY SHALL BE THE SOLE DETERMINANT OF TECHNICALITY VS. NON-RESPONSIVE SUBMITTAL:

15. FAILURE TO USE COUNTY FEE SCHEDULE.
16. FAILURE TO RETURN OR ACKNOWLEDGE APPLICABLE COMPLIANCE/SPECIFICATION SHEETS.
17. FAILURE TO RETURN OR ACKNOWLEDGE APPLICABLE ADDENDA.
18. FAILURE TO PROVIDE INFORMATION ON ALTERNATES OR EQUIVALENTS.
19. FAILURE TO PROVIDE BID BOND, WHEN REQUIRED, WILL RESULT IN SUBMITTAL BEING DEEMED NON-RESPONSIVE AND AUTOMATIC REJECTION. BID BONDS ARE NOT REQUIRED ON ALL SOLICITATIONS. BOND REQUIREMENTS ARE CLEARLY STATED ON THE INVITATION PAGE. IF CLARIFICATION IS NEEDED, CONTACT THE PURCHASING ASSOCIATE LISTED IN THE INVITATION. **IF BONDS ARE REQUIRED, FORMS WILL BE PROVIDED IN THIS SOLICITATION DOCUMENT.**
20. FAILURE TO PROVIDE CONTRACTOR AFFIDAVIT AND AGREEMENT, WHEN REQUIRED, MAY RESULT IN SUBMITTAL BEING DEEMED NON-RESPONSIVE AND REJECTED. THE CONTRACTOR AFFIDAVIT AND AGREEMENT IS NOT REQUIRED ON ALL SOLICITATIONS. IF CLARIFICATION IS NEEDED, CONTACT THE PURCHASING ASSOCIATE LISTED IN THE INVITATION.
21. FAILURE TO PROVIDE AN ETHICS AFFIDAVIT WHEN REQUIRED, MAY RESULT IN SUBMITTAL BEING DEEMED NON-RESPONSIVE AND REJECTED. THE ETHICS AFFIDAVIT IS REQUIRED ON ALL FORMAL SOLICITATIONS OVER \$100,000.00. IF CLARIFICATION IS NEEDED, CONTACT THE PURCHASING ASSOCIATE LISTED IN THE INVITATION.

I. PREPARATION OF SUBMITTAL

- A. Each vendor shall examine the drawings, specifications, schedule, and all instructions. Failure to do so will be at the vendor's risk, as the vendor will be held accountable for their submittal.
- B. Each vendor shall furnish all information required by the solicitation form or document. Each vendor shall sign the submittal and print or type his or her name on the fee schedule. The person signing the submittal should initial erasures or other changes. An authorized agent of the vendor must sign the submittal.
- C. Fee schedule pricing should have only two decimal places unless otherwise stated. In the event of a calculation error in total price, the unit pricing prevails.
- D. Except for solicitations for the sale of real property, individuals, firms, and businesses seeking an award of a Gwinnett County contract may not initiate or continue any verbal or written communications regarding a solicitation with any County officer, elected official, employee, or other County representative other than the Purchasing Associate named in the solicitation between the date of the issuance of the solicitation and the date of the final award. The Purchasing Director will review violations. If determined that such communication has compromised the competitive process, the offer submitted by the individual, firm or business may be disqualified from consideration for award. Solicitations for the sale of real property may allow for verbal or written communications with the appropriate Gwinnett County representative.
- E. Sample contracts (if pertinent) are attached. These do NOT have to be filled out with the submittal but are contained for informational purposes only. If awarded, the successful vendor(s) will be required to execute these documents prior to County execution.
- F. Effective July 1, 2013 and in accordance with the Georgia Illegal Immigration Reform Enhancements for 2013, an original signed, notarized and fully completed Contractor Affidavit and Agreement should be included with vendor's submittal, if the solicitation is for the physical performance of services for all labor or service contract(s) that exceed \$2,499.99 (except for services performed by an individual who is licensed pursuant to Title 26, Title 43, or the State Bar of Georgia). Failure to provide the Contractor Affidavit and Agreement with your submittal may result in being deemed non-responsive and automatic rejection.

II. DELIVERY

- A. Each vendor should state time of proposed delivery of goods or services.
- B. Words such as "immediate," "as soon as possible," etc. should not be used. The known earliest date or the minimum number of calendar days required after receipt of order (delivery A.R.O.) should be stated. If calendar days are used, include Saturday, Sunday, and holidays in the number.

III. EXPLANATION TO VENDORS

Any explanation desired by a vendor regarding the meaning or interpretation of the solicitation, drawings, specifications, etc. must be requested by the question cutoff deadline stated in the solicitation for a reply to reach all vendors before the deadline of the solicitation. Any information given to a prospective vendor concerning a solicitation will be furnished to all prospective vendors as an addendum to the solicitation if such information is necessary or if the lack of such information would be prejudicial to uninformed vendors. The written solicitation documents supersede any verbal or written communications between the parties. Receipt of addenda should be acknowledged in the submittal. **It**

is the vendor's responsibility to ensure they have all applicable addenda prior to their submittal. This may be accomplished by contacting the assigned Purchasing Associate prior to the submittal or visiting the Gwinnett County website.

IV. SUBMISSION OF FORMAL OFFERS/SUBMITTALS

- A. Formal bid and proposal submittals shall be enclosed in a sealed package or envelope, addressed to the Gwinnett County Purchasing Division with the name of the vendor, the date and hour of opening and the solicitation number on the face of the package or envelope. Facsimile or emailed submittals will not be considered. Any addenda should be enclosed in the sealed envelopes as well.
- B. ADD/DEDUCT: Add or deduct amounts indicated on the outside of the envelope are allowed and will be applied to the lump sum amount. Amount shall be clearly stated and should be initialed by an authorized representative.
- C. Samples of items, when required, must be submitted within the time specified and, unless otherwise specified by the County, at no expense to the County. Unless otherwise specified, samples will be returned at the vendor's request and expense, if items are not destroyed by testing.
- D. Items offered must meet required specifications and must be of a quality that will adequately serve the use and purpose for which intended.
- E. Full identification of each item submitted, including brand name, model, catalog number, etc. must be furnished to identify exactly what the vendor is offering. Manufacturer's literature may be furnished but vendor should not submit excessive marketing material.
- F. The vendor must certify that items to be furnished are new and that the quality has not deteriorated to impair its usefulness.
- G. Unsigned submittals will not be considered except in cases where it is enclosed with other documents that have been signed. The County will determine acceptability in these cases.
- H. Gwinnett County is exempt from federal excise tax and Georgia sales tax regarding goods and services purchased directly by Gwinnett County. Vendors are responsible for federal excise tax and sales tax, including taxes for materials incorporated in county construction projects. Vendors should contact the State of Georgia Sales Tax Division for additional information. Agreements where there is a cost-plus mark-up, mark-up will not be paid on taxes.
- I. Information submitted by a vendor in the solicitation process shall be subject to disclosure after the public opening in accordance with the Georgia Open Records Act.

V. WITHDRAWAL DUE TO ERRORS

Vendors must give Gwinnett County Purchasing Division written notice within two (2) business days of completion of the opening stating that they wish to withdraw their submittal without penalty for an obvious clerical or calculation error. Submittal may be withdrawn from consideration if the price was

substantially lower than the other submittals due solely to a mistake therein, provided pricing was submitted in good faith, and the mistake was a clerical mistake as opposed to a judgment mistake and was due to an unintentional arithmetic error or an unintentional omission of a quantity of work, labor or material made directly in the compilation of the submittal. The unintentional arithmetic error or omission can be clearly proven through inspection of the original work papers, documents, and materials used in preparing the submittal sought to be withdrawn. The vendor's original work papers shall be the sole acceptable evidence of error and mistake if a vendor elects to withdraw their submittal. If a quote or bid submittal is withdrawn under the authority of this provision, the lowest remaining responsive offer shall be deemed to be low bid.

No vendor who is permitted to withdraw their submittal shall, for compensation, supply any material or labor or perform any subcontract or other work agreement for the person or firm to whom the contract is awarded or otherwise benefit, directly or indirectly, from the performance of the project for which the withdrawn bid or proposal was submitted.

Vendors who fail to request withdrawal by the required forty-eight (48) hours may automatically forfeit bid bond if a bond was required. Bid may not be withdrawn otherwise.

Withdrawal is not automatically granted and will be allowed solely at Gwinnett County's discretion.

VI. TESTING AND INSPECTION

Since tests may require several days for completion, the County reserves the right to use a portion of any supplies before the results of the tests are determined. Cost of inspections and tests of any item that fails to meet the specifications, shall be borne by the vendor.

VII. F.O.B. POINT

Unless otherwise stated in the request for invitation and any resulting contract, or unless qualified by the vendor, items shall be shipped F.O.B. Destination, Freight Prepaid and Allowed. The seller shall retain title for the risk of transportation, including the filing for loss or damages. The invoice covering the items is not payable until items are delivered and the contract of carriage has been completed. Unless the F.O.B. clause states otherwise, the seller assumes transportation and related charges either by payment or allowance.

VIII. PATENT INDEMNITY

The vendor guarantees to hold the County, its agents, officers, or employees harmless from liability of any nature or kind for use of any copyrighted or uncopyrighted composition, secret process, patented or unpatented invention, articles or appliances furnished or used in the performance of the contract, for which the vendor is not the patentee, assignee, or licensee.

IX. BID BONDS AND PAYMENT AND PERFORMANCE BONDS (IF REQUIRED, FORMS WILL BE PROVIDED IN THIS DOCUMENT)

A five percent (5%) bid bond, a one hundred percent (100%) performance bond, and a one hundred percent (100%) payment bond must be furnished to Gwinnett County for any solicitation as required in the solicitation package or document. **Failure to submit a bid bond with the proper rating will result in submittal being deemed non-responsive.** Bonding company must be authorized to do business in

Georgia by the Georgia Insurance Commission, listed in the Department of the Treasury's publication of companies holding certificates of authority as acceptable surety on Federal bonds and as acceptable reinsuring companies, and have an A.M. Best rating as stated in the insurance requirement of the solicitation. **The bid bond, payment bond, and performance bond must have the proper A.M. Best rating as stated in the solicitation document.**

X. DISCOUNTS

- A. Time payment discounts may be considered in arriving at net prices and in award of solicitations. Offers of discounts for payment within ten (10) days following the end of the month are preferred.
- B. In connection with any discount offered, time will be computed from the date of delivery and acceptance at destination, or from the date correct invoice or voucher is received, whichever is the later date. Payment is deemed to be made for the purpose of earning the discount on the date of the County check.

XI. AWARD

- A. Award will be made to either the highest scoring firm (for proposals) or the lowest responsive and responsible vendor (for quotes/bids). The quality of the articles to be supplied, their conformity with the specifications, their suitability to the requirements of the County, and the delivery terms will be taken into consideration in making the award. The County may make such investigations as it deems necessary to determine the ability of the vendor to perform, and the vendor shall furnish to the County all such information and data for this purpose as the County may request. The County reserves the right to reject any submittal if the evidence submitted by, or investigation of such vendor fails to satisfy the County that such vendor is properly qualified to carry out the obligations of the contract.
- B. The County reserves the right to reject or accept any or all offers and to waive technicalities, informalities and minor irregularities in the submittals received.
- C. The County reserves the right to make an award as deemed in its best interest, which may include awarding to a single vendor or multiple vendors; or to award the whole solicitation agreement, only part of the agreement, or none of the agreement, based on its sole discretion of its best interest.
- D. In the event of proposal scores rounded to the nearest whole number result in a tie score, the award will be based on lowest cost.
- E. If proposal negotiations with the highest ranked firm are unsuccessful, the County may then negotiate with the second ranked firm and so on until a satisfactory agreement has been reached.

XII. DELIVERY FAILURES

Failure of a vendor to deliver within the time specified or within reasonable time as interpreted by the Purchasing Director, or failure to make replacement of rejected articles/services when so requested, immediately or as directed by the Purchasing Director, shall constitute authority for the Purchasing

Director to purchase in the open market articles/services of comparable grade to replace the articles/services rejected or not delivered. On all such purchases, the vendor shall reimburse the County within a reasonable time specified by the Purchasing Director for any expense incurred in excess of the contract prices, or the County shall have the right to deduct such amount from monies owed the defaulting vendor. Alternatively, the County may penalize the vendor one percent (1%) per day for a period of up to ten (10) days for each day that delivery or replacement is late. Should public necessity demand it, the County reserves the right to use or consume articles/services delivered which are substandard in quality, subject to an adjustment in price to be determined by the Purchasing Director.

XIII. COUNTY FURNISHED PROPERTY

No material, labor or facilities will be furnished by the County unless so provided in the solicitation package.

XIV. REJECTION OF SUBMITTALS

Failure to observe any of the instructions or conditions in this solicitation package may constitute grounds for rejection.

XV. CONTRACT

Each submittal is received with the understanding that the acceptance in writing by the County of the offer to furnish any or all the commodities or services described therein shall constitute a contract between the vendor and the County which shall bind the vendor on his part to furnish and deliver the articles quoted at the prices stated in accordance with the conditions of said accepted submittal. The County, on its part, may order from such vendor, except for cause beyond reasonable control, and to pay for, at the agreed prices, all articles specified and delivered.

Upon receipt of a solicitation package containing a Gwinnett County "Sample Contract" as part of the requirements, it is understood that the vendor has reviewed the documents with the understanding that Gwinnett County requires that all agreements between the parties must be entered into via this document. If any exceptions are taken to any part, each must be stated in detail and submitted as part of the vendor's submittal. If no exceptions are stated, it is assumed that the vendor fully agrees to the provisions contained in the "Sample Contract" in its entirety.

Any Consultant as defined in O.C.G.A. §36-80-28 that is engaged to develop or draft specifications/requirements or serve in a consultative role during the procurement process for any County procurement method, by entering into such an arrangement or executing a contract, the consultant agrees to abide by the current state law and: 1) Avoid any appearance of impropriety and shall follow all policies and procedures of the County, 2) Disclose to the County any material transaction or relationship pursuant to §36-80-28, that is considered a conflict of interest, any involvement in litigation or other dispute, relationship, or financial interest not disclosed in the ethics affidavit, and 3) Acknowledge that any violation or threatened violation of the agreement may cause irreparable injury to the County, entitling the County to seek injunctive relief in addition to all other legal remedies.

When the vendor has performed in accordance with the provisions of this agreement, Gwinnett County shall pay to the vendor, within thirty (30) days of receipt of any department approved payment request and based upon work completed or service provided pursuant to the contract, the sum so requested, less the retainage stated in this agreement, if any. If Gwinnett County fails to pay the vendor within sixty (60) days of receipt of a pay request based upon work completed or service provided pursuant to the contract,

the County shall pay the vendor interest at the rate of $\frac{1}{2}\%$ per month or pro rata fraction thereof, beginning the sixty-first (61st) day following receipt of pay requests. The vendor's acceptance of progress payments or final payment shall release all claims for interest on said payment.

The parties agree that this Contract shall be governed and construed in accordance with the laws of the State of Georgia.

XVI. NON-COLLUSION

Vendor declares that the submittal is not made in connection with any other vendor's submittal for the same commodity or commodities, and that the submittal is bona fide and is in all respects fair and without collusion or fraud. An affidavit of non-collusion shall be executed by each vendor. Collusion and fraud in submittal preparation shall be reported to the State of Georgia Attorney General and the United States Justice Department.

XVII. DEFAULT

The contract may be canceled or annulled by the Purchasing Director in whole or in part by written notice of default to the vendor upon non-performance or violation of contract terms. An award may be made to the next low responsive and responsible vendor, or the next highest scoring responsive and responsible proposer, or articles specified may be purchased on the open market similar to those so terminated. In either event, the defaulting vendor (or their surety) shall be liable to the County for costs to the County in excess of the defaulted contract prices; provided, however, that the vendor shall continue the performance of this contract to the extent not terminated under the provisions of this clause. Failure of the vendor to deliver materials or services within the time stipulated on their offer, unless extended in writing by the Purchasing Director, shall constitute contract default.

XVIII. TERMINATION FOR CAUSE

The County may terminate this agreement for cause upon ten days prior written notice to the vendor of the vendor's default in the performance of any term of this agreement. Such termination shall be without prejudice to any of the County's rights or remedies by law.

XIX. TERMINATION FOR CONVENIENCE

The County may terminate this agreement for its convenience at any time upon 30 days written notice to the vendor. In the event of the County's termination of this agreement for convenience, the vendor will be paid for those services actually performed. Partially completed performance of the agreement will be compensated based upon a signed statement of completion to be submitted by the vendor, which shall itemize each element of performance.

XX. SUBSTITUTIONS

Vendors offering substitutions or who are deviating from the attached specifications shall list such deviations on a separate sheet to be submitted with their offer. The absence of such a substitution list shall indicate that the vendor has taken no exception to the specifications contained herein.

XXI. INELIGIBLE VENDORS

The County may choose not to accept the offer by an individual, firm, or business who is in default on the payment of taxes, licenses, or other monies owed to the County. Additionally, vendors or persons placed on an Ineligible Source List for reasons listed in Part 6, Section II of the Gwinnett County Purchasing

Ordinance shall not be eligible to provide any commodities or services to the County during the period such person remains on the Ineligible Source List.

XXII. PENDING LITIGATION

An individual, firm, or business that has litigation pending against the County, or anyone representing a firm or business in litigation against the County, not arising out of the procurement process, will be disqualified.

XXIII. OCCUPATION TAX CERTIFICATE

Each successful vendor must have a valid Gwinnett County occupation tax certificate if the vendor maintains an office within the unincorporated area of Gwinnett County. Incorporated, out of County, and out of State vendors are required to have any and all certificates necessary to do business in any town, County or municipality in the State of Georgia, or as otherwise required by County ordinance or resolution. Vendors may be required to provide evidence of valid certificates. Out of State vendors are required to have a certificate in the Georgia jurisdiction where they receive the most revenue.

XXIV. PURCHASING POLICY AND REVIEW COMMITTEE

The Purchasing Policy & Review Committee has been established to review purchasing procedures and make recommendations for changes; resolve problems regarding the purchasing process; make recommendations for standardization of commodities, schedule buying, qualified products list, annual contracts, supplier performance (Ineligible Source List), and other problems or requirements related to purchasing. The Purchasing Policy & Review Committee has authority to place vendors on the Ineligible Source List for reasons listed in Part 6, Section II of the Gwinnett County Purchasing Ordinance, for a period not to exceed three (3) years.

XXV. AMERICANS WITH DISABILITIES ACT

All vendors for Gwinnett County are required to comply with all applicable sections of the Americans with Disabilities Act (ADA) as an equal opportunity employer. In compliance with the Americans with Disabilities Act (ADA), Gwinnett County provides reasonable accommodations to permit a qualified applicant with a disability to enjoy the privileges of employment equal to those employees without disabilities. Disabled individuals must satisfy job requirements for education background, employment experience, and must be able to perform those tasks that are essential to the job with or without reasonable accommodations. Any requests for the reasonable accommodations required by individuals to fully participate in any open meeting, program or activity of Gwinnett County should be directed to the ADA Coordinator, 75 Langley Drive, Lawrenceville, Georgia 30046, 770-822-8165.

XXVI. ALTERATIONS OF SOLICITATION AND ASSOCIATED DOCUMENTS

Alterations of County documents are strictly prohibited and will result in automatic disqualification of the vendor's solicitation response. If there are "exceptions" or comments to any of the solicitation requirements or other language, then the firm may make notes to those areas, but may not materially alter any document language.

XXVII. TAX LIABILITY

Local and state governmental entities must notify vendors of their use tax liability on public works projects. Under Georgia law, private vendors are responsible for paying a use tax equal to the sales tax rate on material and equipment purchased under a governmental exemption that is incorporated into a

government construction project: excluding material and equipment provided for the installation, repair, or expansion of a public water, gas, or sewer system when the property is installed for general distribution purposes. To the extent the tangible personal property maintains its character (for example, the installation of a kitchen stove), it remains tax-exempt. However, if the installation incorporates the tangible personal property into realty (for example, the installation of sheetrock), it becomes taxable to the private vendor. See O.C.G.A. §48-8-3(2) and O.C.G.A. §48-8-63.

XXVIII. STATE AND FEDERAL LAW REGARDING WORKER VERIFICATION

Effective July 1, 2013 State Law requires that all who enter into a contract for the physical performance of services for all labor or service contract(s) that exceed \$2,499.99 (except for services performed by an individual who is licensed pursuant to Title 26, Title 43, or the State Bar of Georgia) and that all who enter into a contract for public works as defined by O.C.G.A. §36-91-2(12) for the County, must satisfy the Illegal Immigration Reform Enhancements for 2013 in conjunction with the Federal Immigration Reform and Control Act (IRCA) of 1986, in all manner, and such are conditions of the contract.

The Purchasing Division Director with the assistance of the Internal Audit Division shall be authorized to conduct random audits of a vendor's or subcontractors' compliance with the Illegal Immigration Reform Enhancements for 2013 and the rules and regulations of the Georgia Department of Labor. The vendor and subcontractors shall retain all documents and records of its compliance for a period of five (5) years following completion of the contract or shall abide by the current time requirements at the time of the contract. This requirement shall apply to all contracts for all public works, labor or service contracts that exceed \$2,499.99 except for services performed by an individual who is licensed pursuant to Title 26, Title 43, or the State Bar of Georgia.

Whenever it appears that a vendor's or subcontractor's records are not sufficient to verify the work eligibility of any individual in the employment of such vendor or subcontractor, the Purchasing Director shall report same to the Department of Homeland Security and may result in termination of the contract if it is determined at any time during the work that the vendor or subcontractor is no longer in compliance with worker verification.

By submitting an offer to the County, vendor agrees that, in the event the vendor employs or contracts with any subcontractor(s) in connection with the covered contract, the vendor will secure from the subcontractor(s) such subcontractor(s)' indication of the employee-number category applicable to the subcontractor, as well as attestation(s) from such subcontractor(s) that they follow the Illegal Immigration Reform Enhancements for 2013 in conjunction with all federal requirements. Original signed, notarized Subcontractor Affidavits and Agreements must be maintained by the vendor awarded the contract.

A vendor's or subcontractor's failure to participate in the federal work authorization program as defined above shall be subject to termination of the contract. A vendor's failure to follow Gwinnett County's instruction to terminate a subcontractor that is not participating in the federal work authorization program may be subject to termination of the contract.

XXIX. SOLID WASTE ORDINANCE

No individual, partnership, corporation, or other entity shall engage in solid waste handling except in such a manner as to conform to and comply with the current Gwinnett County Solid Waste Ordinance and all other applicable local, state and federal legislation, rules, regulation, and orders.

XXX. GENERAL CONTRACTORS LICENSE

Effective July 1, 2008: **All General Contractors must have a current valid license from the State Licensing Board for Residential and General Contractors, unless specifically exempted from holding such license pursuant to Georgia law (O.C.G.A. §43-41-17).**

XXXI. PRODUCTS MANUFACTURED IN GEORGIA

When contracting for or purchasing supplies, materials, equipment, or agricultural products that exceeds \$100,000.00, excluding beverages for immediate consumption, Gwinnett County shall give preference as far as may be reasonable and practicable to such supplies, materials, equipment, and agricultural products as may be manufactured or produced in this state. Such preference shall not sacrifice quality. Gwinnett County Board of Commissioners shall consider, among other factors, information submitted by the vendor which may include the vendor's estimate of the multiplier effect on gross state domestic product and the effect on public revenues of the state and the effect on public revenues of political subdivisions resulting from acceptance of an offer to sell Georgia manufactured or produced goods as opposed to out-of-state manufactured or produced goods. Any such estimates shall be in writing. **(O.C.G.A. §36-84-1).**

XXXII. INDEMNIFICATION

To the fullest extent permitted by law, the vendor shall, at his sole cost and expense, indemnify, defend, satisfy all judgments, and hold harmless the County, its commissioners, officers, agents, and employees from and against all claims, damages, actions, judgments, costs, penalties, liabilities, losses and expenses, including, but not limited to, attorney's fees arising out of or resulting from the performance of the work, provided that any such claim, damage, action, judgment, cost, penalty, liability, loss or expense (1) is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the work itself) including the loss of use resulting therefrom, and (2) is caused in whole or in part by the negligent acts, errors by any act or omission of the vendor, any subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, regardless whether such claim is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or otherwise reduce any of the rights or obligations of indemnity which would otherwise exist as to any party or person described in this agreement. In any and all claims against the County, its commissioners, officers, agents, and employees by any employee of the vendor, any subcontractor, anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable, the indemnification obligation contained herein shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for the vendor or any subcontractor under Worker's Compensation Acts, disability benefit acts, or other employee benefit acts.

Vendor shall also indemnify, hold harmless, insure, and defend the County for damages, losses, or expenses to the extent caused by or resulting from the negligence, recklessness, or intentionally wrongful conduct of the vendor or other persons employed or utilized by the vendor in the performance of a contract that utilizes survey services.

XXXIII. CODE OF ETHICS

Vendors shall disclose under oath the name of all elected officials whom it employs or who have a direct or indirect pecuniary interest in the business entity, its affiliates, or its subcontractors. (This shall not apply to informal purchases as defined by the Purchasing Ordinance.) The vendor shall execute a Code of Ethics affidavit. Failure to submit the affidavit during the procurement process shall render the offer non-responsive.

Any business entity holding a contract with Gwinnett County that after execution of the contract or issuance of the purchase order employs, subcontracts with, or transfers a direct or indirect pecuniary

interest in the business entity to an elected official shall within five (5) days disclose such fact in writing under oath to the Clerk of the Board of Commissioners. Failure to comply, or vendors submitting false information or omitting material information shall be referred to the Purchasing Policy & Review Committee for action pursuant to the Purchasing Ordinance or to the District Attorney for possible criminal prosecution. Note: See Gwinnett County Code of Ethics Ordinance E02011, Sec. 54-33. The ordinance is available to view in its entirety at www.gwinnettcountry.com.

XXXIV. ELECTRONIC PAYMENT

Vendors accepting procurements should select one of Gwinnett County's electronic payment options.

- A. A vendor may select ePayables payment process which allows acceptance of Gwinnett County's virtual credit card as payment for outstanding invoices. The authorized vendor representative must send an email to: vendorelectronicpayment@gwinnettcountry.com and indicate the desire to enroll in Gwinnett County's virtual credit card payment process.
- B. A vendor may select Direct Deposit payment process and the payment will be deposited directly into an account at their designated financial institution. To securely enroll in Direct Deposit, either access your online [Vendor Login and Registration](#) on the County's web site and update the requested information on the Direct Deposit tab or mail a [Direct Deposit Authorization Agreement](#) form.

The County will send a Payment Advice notification via email for both payment types. For more information about Electronic Payments, please visit the Gwinnett County Treasury Division page or click here -> [Gwinnett County Electronic Payments](#).

DIRECTIONS TO GJAC BUILDING FROM I-85

Take I-85 to Georgia Highway 316 (Lawrenceville/Athens exit). Exit Highway 120 (Lawrenceville/Duluth exit) and turn right. At seventh traffic light, turn right onto Langley Drive. Cross Highway 29 through the traffic light and proceed through the roundabout. Visitors can either proceed to the front parking area on the left or to the parking deck behind the building. Click [here](#) for additional information about parking. **The Purchasing Division is located on the fourth floor of the Charlotte J. Nash Building. NOTE THAT THE PURCHASING DIVISION HAS TEMPORARILY RELOCATED.**

DEPARTMENT OF TRANSPORTATION
GWINNETT COUNTY
SPECIAL PROVISION
TO GDOT SPECIFICATIONS, 2021 EDITION

Section 682GW - Electrical Wire, Cable, and Conduit

Key to styles and symbols used in this document:

Italicized Font = Direction on how to handle the section that follows.

Standard Font = Original text from GDOT specification; retained for clarification of modifications.

Bold Font = Additional or modified text.

_ (underscore) = Location where text had been removed from GDOT specification.

...(3 periods) = Location where GDOT specification text is still applicable but not duplicated here.

For GDOT Specification Section 682, make the following substitutions:

GDOT, Department, State => Gwinnett County DOT

TMC => TCC = Gwinnett County Traffic Control Center

NaviGAtor => Gwinnett County's instance of NaviGAtor

Add to subsection 682.2 the following:

682.2 Materials

682.2.02 ITS

All conduit products shall be installed, applied, inspected, and/or utilized in accordance with the Construction Section of these Standard Specifications.

A. Conduit, Nonmetal, Type 2

Conduit and fittings shall be Schedule 40 unplasticized PolyVinyl Chloride (PVC) that meets Federal Specification WC-1904-A.

B. Conduit, Nonmetal, Type 3

- 1. Conduit shall be manufactured from virgin high-density polyethylene (HDPE).**
 - 2. Conduit shall be extruded from colored material for uniform full-thickness coloring.**
 - 3. Where striping is required, a minimum of three colored longitudinal stripes of HDPE material shall be co-extruded on the conduit outer wall. The three stripes shall be equally spaced around the circumference and continuous for the entire length of conduit. Printed or embossed striping is not permitted.**
 - 4. Unless otherwise noted in the Contract Documents, color code for conduit used for Type 3 installation shall comply with the following:**
 - a. Conduit installed for communication cables:**
 - i. One conduit: Orange.**
 - ii. Two conduits: One orange, one orange with blue stripe.**
 - iii. Three conduits: One orange, one orange with blue stripe, one orange with yellow stripe.**
 - b. Conduit installed for Power Service shall be red.**
 - 5. Conduit shall conform to ASTM D-3035 and shall meet the following requirements:**
-

- a. 1 in. (25 mm) conduit
 - i. Nominal outer diameter: 1.315 in. (33.40 mm)
 - ii. Minimum inner diameter: 1.030 in. (26.16 mm)
 - iii. Minimum wall thickness: 0.120 in. (3.05 mm)
- b. 1¼ in. (32 mm) conduit
 - i. Nominal outer diameter: 1.660 in. (42.16 mm)
 - ii. Minimum inner diameter: 1.313 in. (33.35 mm)
 - iii. Minimum wall thickness: 0.151 in. (3.84 mm)
- c. 1½ in. (38 mm) conduit
 - i. Nominal outer diameter: 1.900 in. (48.26 mm)
 - ii. Minimum inner diameter: 1.506 in. (38.25 mm)
 - iii. Minimum wall thickness: 0.173 in. (4.39 mm)
- d. 2 in. (51 mm) conduit
 - i. Nominal outer diameter: 2.375 in. (60.32 mm)
 - ii. Minimum inner diameter: 1.885 in. (47.88 mm)
 - iii. Minimum wall thickness: 0.216 in. (5.49 mm)

C. Conduit, Fiberglass

1. Conduit shall be manufactured from fiberglass reinforced epoxy.
2. The conduit shall be “bullet resistant”, capable of preventing the penetration of a 0.45 caliber slug fired from a distance of 20 ft. (6 m).
3. The conduit shall conform to the following physical and mechanical properties when tested in accordance with the referenced specification.

Physical and Mechanical Properties

Test Methods

- | | |
|--|----------------|
| a. Ultimate Tensile Strength - 11,000 PSI (75800 kPa) Min. | ASTM D 2105 |
| b. Dielectric Strength - 500 Volts/Mil. | ASTM D 149 |
| c. Water Absorption - 1% Max. | ASTM D 570 |
| d. Specific Gravity - 1.9 - 2.0 | ASTM D 792 |
| e. Glass Content - 68 +- 2% | API SPEC 15 LR |
| f. Barcol Hardness - 58-52 | ASTM D 2583 |

4. All accessories and fittings, including couplings and expansion joints, shall meet all the same “bullet resistant” requirements as the conduit.
5. All conduit and fittings shall be black.
6. Conduit shall meet the following requirements.
 - a. 2 in. (51 mm) conduit
 - i. Nominal outer diameter: 2.500 in. (tolerance +0.028”/-0.018”)
[60.50 mm (tolerance +0.71/-0.46)]
 - ii. Minimum inner diameter: 2.000 in. (50.80 mm)
 - iii. Minimum wall thickness: 0.250 in. (6.35 mm)
 - b. 4 in. (102 mm) conduit

- i. **Nominal outer diameter: 4.500 in. (tolerance +0.034"/-0.028")
[114.3 mm (tolerance +0.86/-0.71)]**
- ii. **Minimum inner diameter: 4.000 in. (101.6 mm)**
- iii. **Minimum wall thickness: 0.250 in. (6.35 mm)**

D. Conduit Duct Bank

1. **Conduit in duct banks shall be manufactured from HDPE and shall conform to the same requirements.**
2. **Conduit Duct Bank, Type 1 shall include six 1-¼" (32 mm) conduits and three 2" (51 mm) conduits.**
3. **Conduit Duct Bank, Type 2 shall include eight 1-¼" (32 mm) conduits and three 2"(51 mm) conduits.**
4. **Conduit Duct Bank, Type 3 shall include four 2"(51 mm) conduits.**
5. **Conduit Duct Bank, Type Special shall be as shown in the Plans.**
6. **Where required in the Contract Documents, conduits shall be located and secured in the conduit duct bank by conduit spacers configured into an assembly that is appropriate for the duct bank type.**
7. **Conduit Spacers**
 - a. **Conduit Spacer shall be steel or molded high impact polystyrene that is resistant to rot and moisture absorption.**
 - b. **Spacers shall be manufactured to have an interlocking design such that spacers for different conduits can be assembled for the appropriate duct bank configuration.**
 - c. **All spacers on the bottom of an assembly shall be "base" that includes a flat base with a minimum of 6 in² (3900 mm²) of bearing area for each bottom conduit.**

E. Flexible Fabric Innerduct

1. **The flexible fabric innerduct shall be a woven sleeve containing single or multi-cell textile innerduct used to optimize allocation of cables within conduit structures.**
2. **The flexible fabric innerduct shall have a solid copper, polyvinyl color coated conductor (19AWG minimum) for tracing and rated for a minimum of 6 amps and 600 volts.**
3. **The flexible fabric innerduct shall contain a flat woven pull tape with a minimum of 1250 lb (567 kg) tensile strength.**
4. **Sizes shall be 1¼ in. (32 mm), 2 in. (51 mm), 3 in. (81.5 mm), and 4 in. (102 mm), or as specified in the plans.**

F. Couplings and Fittings

1. **Couplings shall be by epoxy adhesive interference joint with bell and spigot or stop coupling fittings only.**
2. **Couplings shall be airtight and watertight.**
3. **All couplings shall be installed in accordance with the conduit and the coupling manufacturer's recommendations.**
4. **Only couplings of the same type of fiberglass as specified above are permitted.**
5. **Bends and Sweeps.**
 - a. **Fixed bends and sweeps shall be used; no flexible bends are permitted.**
 - b. **Bends and sweeps shall be compatible with the coupling requirements above.**
 - c. **Bends and sweeps shall be of consistent radius and inner diameter, with a minimum radius of 10 times the inner diameter.**
 - d. **In no case shall bends exceed a 90-degree direction change.**

G. Pull Tape

1. Pull tape shall be detectable, and shall consist of a single 24 AWG copper wire with polyethylene or PVC jacket woven into a polyester tape .
2. The tape shall have the following properties:
 - a. 1250 lbs. (567 kg) tensile strength
 - b. Flat, not round, construction
 - c. Printed foot markings
 - d. Pre-lubricated for reduced pulling tension at start of cable pull
 - e. Low susceptibility to absorption of moisture; moisture resistant
 - f. Corrosion resistant embedded conductor

H. Duct Plugs

1. Install blank duct plugs in each empty conduit that enters an ECB, pull box, hub, or building entrance.
2. The plug shall be sized to fit the conduit in which it is used and shall provide a watertight and airtight seal by use of mechanical expansion.
3. No sealants or caulks shall be used.
4. The duct plug shall have inner rings to which pull tape can be tied.
5. All metallic components shall be stainless steel.
6. Install a fiber optic inner duct plug in each conduit that enters an ECB, pull box, hub, or building entrance and has a cable installed in it.
 - a. The plug shall be sized to fit the conduit and cable with which it is used
 - b. The plug shall be a split plug with a bushing assembly for sealing around the cable by mechanical compression.
 - c. All metallic components shall be stainless steel.

I. Conduit Detection Wire

Conduit detection wire shall be #10 AWG stranded green-insulated THWN or THHN-THWN conductor.

J. Electrical Communication Box

1. Design electrical communication box and cover in accordance with ASTM C-857-95.
2. Ensure that the walls, floor, and roof are a minimum 6 in. thickness.

J. Pull Box

1. Design pull box and cover in accordance with 924.2.02 and as shown in the Details.
2. Install cable racks as shown in the Details.
 - a. Install two (2) cable racks on one long wall of the pull box.
 - b. Install cable racks directly to the wall or use the shortest standoff bracket possible.
 - c. Include cable support arms, 7 in. to 9 in. in length, with plastic or ceramic insulators with each rack.
 - d. Install one (1) cable support arm per rack for each cable installed plus one (1) cable support arm per rack as spare.
 - e. Manufacture all cable racks, cable support arms, and mounting/fastening hardware of hot-dipped galvanized steel.

K. Conduit Labeling

1. All conduit shall be labeled with durable identification data which will provide traceability of the manufacturer, plant location, manufacture/date, date codes, shift, and machine of manufacturer, conduit size (inner diameter trade size and wall thickness/rating), and sequential foot marking.
2. Line text height shall be at least ½ in. (10 mm). Text labeling shall occur a maximum of every 2 ft. (0.6 m).
3. The text shall be indelibly printed in high contrast to the conduit.
4. The text shall be oriented to face up for underground installation; the text shall be oriented to face down for under bridge installation.
5. The conduit shall also be labeled as shown below. This labeling shall occur a maximum of every 4 ft. (1.2 m).



Delete subsection 682.6.01.A.9.a and replace with the following:

682.6 Construction

682.6.01 Conduit, Pull and Junction Box and Cable Installation Requirements

A. General Requirements for Conduit

9. Conduit Couplings

- a. Make every effort to minimize the use of couplings. There shall be no more than three (3) couplings in a 20 foot linear section of a conduit run. **All coupling locations shall be marked on the ground with orange paint and/or a labeled survey stake.**

Add to subsection 682.6.01.A the following:

14. Conduit installations longer than 50 feet between termination points (pull boxes, ECBs, cabinets, etc.) shall be 48 inches deep minimum, unless otherwise specified in the plans or by the Engineer. The conduit may also be less than 48 inches deep within 25 feet of a termination point. Coupling locations are not considered termination points
15. When possible, conduit shall be installed under drainage structures (culverts, etc.) If it must go over, the bottom of the conduit shall be at least 12” above the top of the drainage structures; if necessary, conduit may be shallower than 48 inches with the approval of the engineer.
16. Conduit to be installed behind existing guardrail shall be at least 5 feet behind the face of the guardrail.

Add to subsection 682.6.01.D the following:

D. Installing Conduit Underground

15. Conduit installations longer than 50 feet between termination points (pull boxes, ECBs, cabinets, etc.) shall be 48 inches deep minimum, unless otherwise specified in the plans or by the Engineer. The conduit may also be less than 48 inches deep within 25 feet of a termination point. Coupling locations are not considered termination points.

16. **When possible, conduit shall be installed under drainage structures (culverts, etc.) If it must go over, the bottom of the conduit shall be at least 12" above the top of the drainage structures; if necessary, conduit may be shallower than 48 inches with the approval of the engineer.**
17. **Conduit to be installed behind existing guardrail shall be at least 5 feet behind the face of the guardrail.**

Add to subsection 682.6.01.I.1 the following:

- I. Constructing Pull and Junction Boxes
 1. Ground Mounted Pull Boxes
 - j. **Install two cable racks, minimum 54 in. in length, on one long wall of the pull box as shown in the Details. Install cable racks directly to the wall or use the shortest standoff bracket possible. Include cable support arms, 7 in. to 9 in. in length, with plastic or ceramic insulators with each rack. Install one (1) cable support arm per rack for each cable installed plus one (1) cable support arm per rack as spare. Manufacture all cable racks, cable support arms, and mounting/fastening hardware of hot-dipped galvanized steel. All cable racks will be grounded and tested per manufacturer recommendations.**

Delete subsections 682.6.01.J.1 and .3 and substitute the following:

- J. Pull Tape
 1. Install pull tape, by hand pulling, blowing, or via vacuum method, into each empty conduit during conduit installation. **Also install pull tape in the conduit with the fiber if the conduit is greater than or equal to 2" diameter and there is only 1 fiber cable.**
 3. Install and secure 5 ft (1.5 m) of slacked pull tape for each _ conduit or cell in each **pull box, ECB or vault.**

Delete subsection 682.6.01.K.2 and substitute the following:

- K. Conduit Detection (Tracer) Wire
 2. If more than one conduit is being installed in a single bore, only one conduit detection wire is required, **and it shall be installed in the spare conduit, if there is one.**

Add to subsection 682.6.01.M the following:

- M. Installing Cable in Conduit
 5. **The orange (no stripe) conduit shall contain the fiber cable, tracer wire, and pull string (when required.) If more than one conduit is used, the orange-with-blue-stripe conduit shall be the second to be occupied with fiber and pull string (when required.)**

Add to subsection 682.6.01.O the following:

- O. Electrical Service Point Installation
 7. **The electrical service points shown on the plans are for information only. Coordinate with the local electrical utility companies to determine actual service point location, specific utility company requirements, readiness for service, and to provide power to the service points.**
 8. **For a new electrical service point location:**

- a. Furnish and install an electrical service point at the new service drop location.
 - b. Include, as a minimum, with the electrical service point equipment at a new drop a service disconnect, surge arrestor, grounding electrode and conductor, and all necessary conduit, wiring and hardware.
 - c. Provide a ground conductor, other than the electrical service conduit, between the electrical service disconnect ground busbar and the equipment cabinet service entrance terminal block.
 - d. Furnish and install a service metering base where required by the local utility or electrical codes or where shown in the Plans.
 - e. Include a minimum 30 ampere circuit breaker with electrical service disconnects.
 - f. Surge Arrestor:
 - i. Mount the electrical surge arrestor on the disconnect housing.
 - ii. The arrestor shall be rated for a maximum permissible line to ground voltage of 175RMS.
 - iii. The arrestor shall be in conformance with NEMA standards for surge arrestors.
 - g. Conduit:
 - i. Electrical service conduit shall be minimum 2 in. (25 mm) diameter.
 - ii. Separate electrical service conduit from all other conduit.
 - iii. This conduit cannot contain any other wiring.
 - iv. Dedicate electrical service conduit from the electric utility drop point through the meter base and disconnect and to the cabinet.
 - v. The electrical service conduit shall enter the cabinet through the cabinet bottom.
9. For an existing electrical service point location:
- a. Furnish and install the necessary materials and equipment to supply service to the cabinet from the existing service drop.
 - b. Unless otherwise shown in the Plans, service the cabinet from a dedicated branch circuit with circuit breaker.
 - c. Make all electrical service installation from the existing drop point as specified for new electrical service drops above.
10. Furnish and install surge suppression at all electrical power service sources.
11. Ground all electrical power service sources and bond the AC neutral and ground at the power service source only.
12. Gwinnett County will establish accounts with the appropriate utility provider. The contractor shall provide a minimum 60 days before service is required. The contractor will verify all service is placed on the County's service account numbers.

Add to subsection 682.6.01 the following:

Q. Flexible Fabric Innerduct

1. Secure from the manufacturer or supplier of the flexible fiber innerduct, and provide to the County, complete and comprehensive written installation manuals.
2. At any time during the construction process, ensure that the manufacturer or supplier provides technical assistance to the Contractor and/or the County.
3. The flexible fiber innerduct and pull string will be secured on both sides of the conduit run per manufacturers recommendations.

Add to subsection 682.7.01.B the following:

682.7 Quality Acceptance and Testing

682.7.01 Conduit and Conductor Testing

B. Testing Conduit Detection (Tracer) Wire

5. **All equipment shall have been calibrated by the manufacturer within one year of test date.**

Delete subsection 682.8.A and substitute the following:

A. Conduit

Underground conduit, conduit duct banks, encased conduit, conduit on structures, directionally bored conduit, and jacked conduit will be measured for payment by the type and size installed per linear foot, tested and accepted. Unless otherwise specified in the Contract, all installation-related costs, **including rehab of existing pull boxes for new conduit openings**, shall be included in the overall cost of the specified conduit

Delete subsection 682.8.E and substitute the following:

682.8 Measurement

E. Electrical Service **_Point**

Electrical **Service _Point** shall be measured and paid for at the Contract unit price per each _ installed, **functional** and accepted. This will include all cabinets, enclosures, conduit and connectors, conductors, equipment racks including support beams and cross-bracing, ground rods and grounding conductors, **risers, wiring, hardware, disconnect, meter base, meter and Class 3, 30 ft. (9 m) timber pole _as appropriate** to ensure proper operation. **Extents included in the Electrical Service Point are from the power company electrical service point to inside the cabinet (traffic, camera, ITS, etc.) where electrical service is required.**

DEPARTMENT OF TRANSPORTATION
GWINNETT COUNTY

SPECIAL PROVISION
TO GDOT SPECIFICATIONS, 2021 EDITION

Section 925GW — Traffic Control Signal Equipment

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For GDOT Specification Section 925, make the following substitutions:

GDOT, Department, State => Gwinnett County DOT

TMC => TCC = Gwinnett County Traffic Control Center

NaviGAator => Gwinnett County's instance of NaviGAator

Delete subsection 925.2.10.B.3.d.iv and substitute the following:

925.2 Materials

925.2.10 Rectangular Rapid Flashing Beacon Assembly Requirements

B. Equipment

3. Rectangular Rapid Flashing Assembly shall meet the performance requirements listed below:

d. Solar Panel Subsystem and Batteries

iv. Provide cabinet (if required) that is pole mounted, NEMA 4x rated _ cabinet (**not fiberglass**) with locking clasps or powder coated aluminum with tamper proof hinged door or approved equivalent.

Delete subsection 925.2.14.B.4.d and e substitute the following:

925.2.14 Signal Module Requirements

B. Equipment

4. Lens

d. Provide ___ **all** modules with _ **clear (transparent)** lenses _.

Delete subsection 925.2.17.A.2.a.i and substitute the following:

925.2.17 Vehicle Traffic Face Requirements

A. General

2. Verify that 12 in. (305 mm) polycarbonate vehicle traffic signal faces meet to current ITE Vehicle Traffic Control Traffic Signal Faces specification with the following modifications or clarifications:
 - a. Unless otherwise approved by the Department or noted in the Contract, supply traffic signal faces with the following exterior color scheme.
 - i. Front face, including doors and visors, flat black with **black** signal housing (back)

Delete subsection 925.2.17.C.10 and substitute the following:

C. Universal Closure Kit Requirements

10. Verify that the closure cap is molded to closely match the color of the traffic signal face (**black**).

Delete subsections 925.2.19.B.1.g and 925.2.19.B.4.c and substitute the following:

925.2.19 Blank-Out Sign Requirements

B. Equipment

1. Sign Enclosure
 - g. Prime the entire case with zinc chromate, bake the inside with two coats of non-yelling white, and paint the outside with two coats of **flat black** as specified in the Contract.
4. Painting
 - c. Paint the housing, brackets, fittings etc., **black**.

Delete subsection 925.2.21.B.5 and substitute the following:

925.2.21 Pedestrian Traffic Signal Face Requirements

B. Equipment

5. Supply pedestrian traffic signal faces with black face and a **black** body, unless otherwise specified in the contract.

DEPARTMENT OF TRANSPORTATION
GWINNETT COUNTY
SPECIAL PROVISION
TO GDOT SPECIFICATIONS, 2021 EDITION

Section 926GW — Wireless Communications Equipment

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For GDOT Specification Section 926, make the following substitutions:

GDOT, Department, State => Gwinnett County DOT

TMC => TCC = Gwinnett County Traffic Control Center

NaviGAtor => Gwinnett County's instance of NaviGAtor

Add to section 926.1.01 the following:

926.1 General Description

926.1.01 Definitions, Acronyms, and Abbreviations

A. Definitions

5. **Wireless System, Type 4-CB: Cisco IR1101 broadband cellular wireless Ethernet router and associated equipment.**
6. **Connected Vehicle Roadside Unit (CVRSU): Radio, antenna, and associated equipment that match GDOT's current deployment of connected vehicle technology.**

Add to subsection 926.2.01 the following:

926.2 Materials

926.2.01 Wireless Communications System Requirements

D. Type 2 Wireless System

11. **Provide wireless system that is POE and an integrated radio/antenna.**

E. Type 3 Wireless System

11. **Provide wireless system that is POE and an integrated radio/antenna.**

L. Type 4-CB Wireless System

1. Gwinnett County has a Cisco network. Provide the following Cisco broadband cellular wireless Ethernet router and required accessories. No other devices are permitted.

<u>Part Number</u>	<u>Description</u>
IR1101-A-K9	Cisco IR1101 Integrated Services Router Rugged with SL-IR1101-NA software license
CON-SNT-IR1101AK	SNTC-8X5XNBD Cisco IR1101 Industrial Integrated Services Router
SL-IR1101-NA	Network Advantage License for Cisco IR1101 Industrial ISR
P-LTE-MNA	Category 4 LTE module, multi-carrier, Band 14, North America
4G-LTE-ANTM-O-3-B	Cisco Dual LTE-Single GPS Multi-band Antenna (Black)
PWR-IE50W-AC-L= *	AC power adapter for 110/220V AC and 88-300V DC input (temperature profile: -40C to 60C)
N/A (PWR CABLE)	Power cord, from power module to receptacle
IR1101-DINRAIL(=)	Din-rail clip for vertical or horizontal mounting

* Power adaptor does not need to be Cisco brand, but does need to be comparable and fully compatible.

2. Gwinnett County will obtain the SIM card and cellular service.
3. Get approval for and provide any other materials needed for installation.

M. Connected Vehicle Roadside Unit (CVRSU)

1. Provide CVRSU that matches (in brand and model) GDOT’s current approved product for connected vehicle roadside technology. No other devices are permitted.

Delete subsection 926.3.01.B.4 and substitute the following:

926.3 Construction

926.3.01 Construction Requirements

B. Wireless System Survey

4. For Type 4 **and Type 4-CB**, determine and verify broadband cellular coverage for each proposed site. Each site shall have sufficient signal strength to provide full performance of the wireless link.

Delete subsection 926.3.01.D.5 and substitute the following:

D. Antenna Mounting

5. For Type 4 **and Type 4-CB**, mount the antenna on the field cabinet. Use threaded stub mount on the cabinet for vandal-resistant mounting. **Do not drill any hole in any cabinet without specific approval from Gwinnett County DOT and/or Gwinnett County DOT staff present. Cover cabinet equipment prior to drilling to catch the metal shavings; remove cover and all metal shavings when drilling is complete.**

Add to subsection 926.4.B the following:

926.4 Measurement

B. Wireless System, Type 4 **and Type 4-CB**

...

Add to subsection 926.4 the following:

E. Connected Vehicle Roadside Unit (CVRSU)

The CVRSU system will be measured for payment by the number installed, complete, functional, tested and accepted. Unless otherwise specified in the Contract, furnish and install the following minimum items as part of a CVRSU system: a radio unit, antennas, cabling and associated components, and work, equipment, and appurtenances as required, to provide a fully functional CVRSU system. The price bid shall also include system documentation to be turned over to the Department and other material necessary to document the operation of the applicable CVRSU system. This price will be full compensation for labor, tools, materials, equipment, and incidentals necessary to complete the work.

DEPARTMENT OF TRANSPORTATION

GWINNETT COUNTY

SPECIAL PROVISION

TO GDOT SPECIFICATIONS, 2021 EDITION, Supplemental Specification for Section 935

Section 935GW - Fiber Optic System

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For GDOT Specification Section 935, make the following substitutions:

GDOT, Department, State => Gwinnett County DOT

TMC => TCC = Gwinnett County Traffic Control Center

NaviGAator => Gwinnett County's instance of NaviGAator

Delete subsections 935.2.01.C.3.a.i and 935.2.01.C.3.b.v and substitute with the following:

935.2 Materials

935.2.01 Fiber Cable and Optical Requirements

C. Fiber Optic Cable Construction

3. Provide labeling for the fiber optic cable meeting the following minimum requirements:

a. Label fiber optic cables (trunk and drop) using the following template, unless otherwise listed in the Contract:

i. Manufacturer's name – Optical Cable – Year – Telecommunication Handset Symbol – **Gwinnett DOT** _ – Description (which consists of XX SM or MM, where XX denotes the fiber count).

b. Use cable marking that meets the following minimum requirements:

v. Pre-print the following text, or alternate text shown in the Contract documents, legibly on markers used for the cables:

Cable ID: XX-XXXXX

Gwinnett DOT

Optical Cable

Where XX-XXXXX is the cable ID as defined in the **plan set (typically GW-SXXX for the trunk and DF-TXXX or DF-CXXX for the drop.)**

Delete subsection 935.2.02.C.1 and 935.2.02.C.2 and substitute with the following:

935.2.02 Fiber Optic Components Requirements

D. Fiber Optic Connector

1. Provide certified LC fiber optic connectors for SFP optical transceivers for network switches and for **all new** FPPs and FDUs _.
2. Provide only ST-compatible, ceramic-insert couplers where barrel couplers are used in **existing** passive termination applications _.

Add to subsection 935.2.02.D the following:

D. FPP and FDU

- 9. Provide FDUs that are approximately 4 RUs and the connector panels are mounted vertically.**
- 10. For 144 and 288 FDUs, use only cassette-style systems with 12 and 24 fiber cassettes, respectively.**

Add to subsection 935.3.01.A.1.a the following:

935.3 Construction

935.3.01 Construction Requirements

A. General Construction

1. Fiber Optic Installation Plan
 - a. Develop a fiber optic installation plan for review and approval by the Department prior to fiber optic cable installation, splicing, and termination work. Include at a minimum the following components:
 - vi. Location of proposed reel-to-reel splices.**

Add to subsection 935.3.01.A the following:

- 3. Prior to ordering any cables, verify on site the length of each cable that is required, taking all necessary measurements.**

Add to subsection 935.3.01.E.9 the following:

E. Cable Splicing

9. To protect splices, meet the following requirements.
 - f. Do not double stack splices.**

Add to subsection 935.3.01.J the following:

J. FPP/FDU

8. For each FDU, label:

- a. The top left of each connector panel with the fiber/port number.
- b. The top center of each connector panel with a letter, starting with A on the leftmost panel.
- c. The front door of the FDU (with the FDC ID, cable IDs, and system name(s) with direction(s), all per the FDC termination and use tables provided in the plans or by the TCC.)

9. Install FPPs and FDUs according to the County's preferred location within each cabinet. Each signal and camera cabinet are similar, so general approval for FPPs is sufficient. However, individual approval is required for each FDU, regardless of cabinet.

Add to subsection 935.4.A the following:

935.4 Measurement

A. Outside Plant Fiber Optic Cable, Loose Tube, Single Mode, No. Fibers

...**The price bid will also include any extra reel-to-reel splice locations (splices, enclosures, etc.) that are not in the plans nor deemed necessary by the Engineer; however, they must be approved by the Engineer.**

Delete subsection 935.4.C and substitute with the following:

C. Fiber Patch Panel or Fiber Distribution Unit, Rack or Wall Mount, No. Ports

FPPs and FDUs will be measured for payment by the number of units installed, complete, functional, tested and accepted. The number of ports is equal to the **size specified**. FPPs and FDUs will be measured in units of each and paid for at the Contract price each, which will include, but not be limited to, housing, **cassettes**, splice trays or splice holders, fiber interconnect cables, fiber pigtail cables, splices between the incoming cable fibers and fiber interconnect/pigtail cables, splice protection, connector modules, connectors, wire management, mounting hardware within field cabinet/hub rack and wall mounting hardware, ancillary and incidental materials, testing, documentation, and labor and equipment necessary to complete the work..

DEPARTMENT OF TRANSPORTATION
GWINNETT COUNTY
SPECIAL PROVISION
TO GDOT SPECIFICATION, 2021 EDITION

Section 936GW – Closed Circuit Television (CCTV)

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For GDOT Specification Section 936, make the following substitutions:

GDOT, Department, State => Gwinnett County DOT

TMC => TCC = Gwinnett County Traffic Control Center

NaviGator => Gwinnett County's instance of NaviGator

Delete subsection 936.1.01.A.1 and substitute with the following:

936.1 General Description

936.1.01 Definitions, Acronyms, and Abbreviations

A. Definitions

1. Camera Mounting Arm, Types 1, **1A**, 2, **2A**, 3, and 4: A structural arm to which a CCTV camera system is mounted.

Add to subsection 936.1.01.A the following:

12. **CCTV Camera System, Type 1S: same as Type 1, except with low power consumption for solar power applications.**

Add to these subsections

936.2.01.B.7.a,
936.2.01.C.1,
936.2.01.C.1.v
936.2.01.C.2
936.2.01.F.2
936.2.01.F.5.b
936.2.01.F.6.b
936.4.A

the following:

...Types 1, **1S**, ...

Add to subsection 936.2.01.A the following:

936.2 Materials

936.2.01 IP-Based CCTV Camera Requirements

A. General.

- 4. Provide an open application platform that supports manufacturer or third-party applications, such as video analytics.**

Add to subsection 936.2.01.G the following:

G. Electrical.

- 4. Type 1S CCTV camera system power consumption: typical \leq 11W, max \leq 21W.**

Add to subsection 936.2.03.C the following:

936.2.03 Camera Mounting Arm

C. Provide camera mounting arm as shown in the Plans. Measure horizontal separation from the face of pole or mast arm to the centerline of the camera mounting mechanism.

- 5. For Type 1A, short arm, mount camera at a position between 0.5 ft and 1.5 ft horizontal separation from the pole, and less than 6 in (150 mm) vertical change from the pole attachment point.**
- 6. For Type 2A, long arm, mount camera mounting at a position between 9 ft and 15 ft horizontal separation from the pole, and less than 5 ft (1.5 m) vertical change from the pole attachment point.**

Add to subsection 936.2.03 the following:

- D. Provide camera mounting arm with a water-tight access panel.**

Add to subsection 936.3.01.A.1 the following:

936.3 Construction

936.3.01 Construction Requirements

A. General Construction

1. ... **Mount the camera system assembly and the mounting bracket arm at the highest point on the pole as possible, such as above the signal strand on a traffic signal pole, unless otherwise directed by the Engineer or specified in the plans.**

Add to subsection 936.3.01.A.3 the following:

3. Provide wiring and cabling that meets the following requirements:
 - j. Route and secure wiring and cabling to avoid sharp edges and to avoid conflicts with other equipment or cabling. **All holes drilled in metal for routing cable must have rubber grommets to protect the cable.**
 - i. **Where a POE camera requires a connector other than a standard RJ45, provide a pigtail where the camera end has the correct connector, and the other end is terminated in the water tight access area, either with a standard RJ45 connected to a rugged RJ45 CAT6 coupler or factory installed components in the mounting arm. There shall be an option for the long CAT6 cable to have a standard RJ45 connector.**
 - m. **Where a CCTV is installed on a traffic signal pole, route cable inside pole when possible, adding a weather head as needed.**

Add to subsection 936.3.01.A the following:

8. **Prior to drilling for a new CCTV strain pole, mark proposed location with white paint and obtain approval from the Engineer.**

Add to subsection 936.4.B the following:

936.4 Measurement

B. Camera Mounting Arm, Types 1, **1A**, 2, **2A**, 3, 3P ...

DEPARTMENT OF TRANSPORTATION
GWINNETT COUNTY

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TO GDOT SPECIFICATIONS, 2021 EDITION

Section 937GW — Detection Systems

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For GDOT Specification Section 937, make the following substitutions:

GDOT, Department, State => Gwinnett County DOT

TMC => TCC = Gwinnett County Traffic Control Center

NaviGAator => Gwinnett County's instance of NaviGAator

Delete subsections 937.2.03.C.1.b, and 937.2.03.C.2.c.i and substitute the following:

937.2 Material

937.2.03 Pedestrian Detection System

C. Equipment

1. Housing

- b. Provide housing and cover with a chromate conversion coating to provide a proper base for paint adhesion. The housing shall be finished with baked enamel finish power coating or paint in _ **black**.

2. Pushbutton (all types)

- c. Provide switch that meets the following requirements:
 - i. Switch rated for _ **300** million cycles.

Delete subsection 937.2.03.E.2.d.ii, and 937.2.03.E.2.e.ii and substitute the following:

E. Requirements

2. Type B pushbutton

d. Pushbutton Locator Tone

- ii. Locator tone have a volume range of 30 to _ **68** dB measured at 3 ft (0.9m) from unit.

e. Vibrating Tactile Button

- ii. Provide tactile arrow that is 2 in (52mm) in length and field adjustable to _ **three** directions.

Delete subsection 937.2.05.C.2.c and substitute the following:

937.2.05 Microwave Vehicle Detection System Requirements

C. Equipment

2. Cables

- c. Twisted pairs shall be identified by separate insulation colors. Communications pairs shall be individually or commonly shielded. **Communication cable shall be 22 or 18 AWG 7-strand tinned copper (1-Pair) twisted. Jacket material shall be polyvinyl chloride with jacket color (black) in conductor color depending on the pair lay length: 1.5" (orange, white with orange stripe), 1.75" (blue, white with blue stripe) or 2" (black, red).**

Delete subsection 937.3.02.C.1 and substitute the following:

937.3 Construction

937.3.02 Inductance Loop Detection System

C. Saw Cut Sealing

1. After successful testing of each loop, fill the **saw cut** slots **using a** caulk gun or similar device **with tip applicator with** one-part loop sealant to fully encase the conductors. See Section 833.2.09.

DEPARTMENT OF TRANSPORTATION

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SPECIAL PROVISION

TO GDOT SPECIFICATION, 2021 EDITION

Section 939GW — Communication and Electronic Equipment

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For GDOT Specification Section 939, make the following substitutions:

GDOT, Department, State => Gwinnett County DOT

TMC => TCC = Gwinnett County Traffic Control Center

NaviGator => Gwinnett County's instance of NaviGator

Delete subsection 939.1.01.A.14 and substitute the following:

939.1 General Description

939.1.01 Definitions, Acronyms, and Abbreviations

A. Definitions

14. Security Lock, **Type A: GDOT** electronic lock system that controls access to a field cabinet, and the cylinder can retrofit existing field cabinet mechanical lock hardware.

Add to subsection 939.1.01.A the following:

15. Security Lock, **Type CR: Gwinnett DOT Card Reader with Electronic Key Backup system for hub cabinets.**
 16. Field Switch, **Type E-CB: a Cisco Layer 2 (Layer 3 upgradeable), 8 copper ports and 4 dual-purpose 1 Gbps ports.**
 17. Field Switch, **Type E-CB-1RU: a Cisco Layer 2 (Layer 3 upgradeable), 24 copper ports and 4 SFP 1 Gbps ports.**
 18. Field Switch, **Type E-CB-S: a Cisco Layer 2, 8 copper ports and 4 SFP 1 Gbps ports; lower power consumption, used in a solar power application.**
 19. Routing Switch, Hub, **Type C-CB: a Cisco Layer 3, 4 dual-purpose 10/100/1000 Mbps ports and 8 SFP 1 Gbps ports.**
 20. Routing Switch, Hub, **Type C-CB-1RU: a Cisco Layer 3, 12 dual-purpose 100/1000 Mbps ports and 4 SFP 1 Gbps ports; rack mountable.**
 21. SFP Fiber Module, **Type 1-CB: Cisco Brand LX optics for shorter distances.**
 22. SFP Fiber Module, **Type 1-CC: Cisco Compatible LX optics for shorter distances.**
-

- 23. SFP Fiber Module, Type 2-CB: Cisco Brand ZX optics for longer distances.
- 24. SFP Fiber Module, Type 2-CC: Cisco Compatible ZX optics for longer distances.

Delete subsection 939.2.02 and substitute the following:

939.2 Materials

939.2.02 Field Switch Requirements

A. General

- 1. Provide one or more of the field switch types listed in Table 1 as specified in the Contract documents.

Table 1 – Field Switch Types		
Type	Cisco Product ID	Description
Type E-CB	IE-4000-8T4G-E	IE4000 switch with 8 FE copper and 4 GE combo uplink ports
	IE4000-DNA-A-L-5Y	IE 4000 DNA Advantage (12 ports), 5 Year Term license
Type E-CB-1RU	IE-4010-4S24P	IE4010 with 24GE Copper PoE+ ports and 4GE SFP uplink ports
	IE4010-DNA-A-H-5Y	IE 4010 DNA Advantage, 5 Year Term license
Type E-CB-S	IE-2000-8TC-G-L	IE 2000 8 x RJ45 10/100M, 2 x 1G Combo, LAN Lite
	IE2000-DNA-E-L-5Y	Cisco DNA Essentials 5 year term license (up to 12 ports)

B, C, D, E., F. N/A.

G. Mechanical and Cabling

- 1. **Field switches are either rack mount or din rail mount, depending on type.** Shelf mounting is not permitted.
- 2. Provide hardware and materials for mounting the field switch within the field cabinet. **Rack-mounted DIN rails must be sufficiently recessed, so the switch and components and cabling have sufficient clearance from the door. They must also have a minimum of two 1” holes on each end for cable routing.**
- 3. Provide rubber dust caps or covers with insertion and removal handles that completely seal the port opening for unused copper and SFP ports.
- 4. N/A.

H. Electrical

- 1-3. N/A.
- 4. **Furnish the following Cisco, or equivalent, power hardware for Type E-CB (IE4000) and Type E-CB-S (IE2000):**

<u>Product Number</u>	<u>Description</u>
PWR-IE65W-PC-AC=	65W AC to DC or High DC to DC power supply; POE+
N/A (PWR CABLE)	Power cord, from power module to receptacle

Furnish the following Cisco power hardware for Type E-CB-1RU (IE4010):

<u>Product Number</u>	<u>Description</u>
PWR-RGD-AC-DC-H POE+	150W High voltage AC or DC power source, for hazardous locations;
N/A (PWR CABLE)	Power cord, from power module to receptacle

I. N/A.

Delete subsection 939.2.03 and substitute the following:

939.2.03 Routing Switch Requirements

A. General

1. Provide one or more of the routing switch types listed in Table 2 as specified in the Contract documents.

Table 2 – Routing Switch Types		
<u>Type</u>	<u>Part Number</u>	<u>Description</u>
Type C-CB	IE-4000-8GS4G-E	IE4000 switch with 8 GE SFP and 4 GE combo uplink ports
	L-IE4000-RTU=	IE4000 Electronic software license upgrade from LAN base L2 to IP Services L3 features
	IE4000-DNA-A-L-5Y	IE 4000 DNA Advantage (12 ports), 5 Year Term license
Type C-CB-1RU	IE-4010-16S12P	IE4010 with 12GE SFP, 12GE Copper PoE+ and 4GE SFP uplink ports
	L-IE4000-RTU=	IE4010 Electronic software license upgrade from LAN base L2 to IP Services L3 features
	IE4010-DNA-A-H-5Y	IE 4010 DNA Advantage, 5 Year Term license

B. N/A.

C. Mechanical and Cabling

1. **Routing switches are either rack mount or din rail mount, depending on type. Shelf mounting is not permitted.**
2. Provide hardware and materials for mounting within the equipment rack that are corrosion resistant.
3. Provide rubber dust caps or covers with insertion and removal handles that completely seal the port opening for unused copper and SFP/QSFP ports.

D. Electrical

1-3. N/A.

4. Furnish the following Cisco, or equivalent, power hardware for Type C-CB (IE4000):

<u>Product Number</u>	<u>Description</u>
PWR-IE65W-PC-AC=	65W AC to DC or High DC to DC power supply; POE+
N/A (PWR CABLE)	Power cord, from power module to receptacle

Furnish the following Cisco power hardware for Type C-CB-1RU (IE4010):

<u>Product Number</u>	<u>Description</u>
PWR-RGD-AC-DC-H	150W; High voltage AC or DC power source, for hazardous locations; PoE
N/A (PWR CABLE)	Power cord, from power module to receptacle

E. N/A.

Add to subsection 939.2.04.A.2 the following:

939.2.04 SFP Module Requirements

A. General

2. Provide the following types of full duplex, SFP fiber optical modules as shown in the Contract documents or as required:
 - a. Type 1: LX/LH optics for single-mode fiber that is ≤ 6.2 miles (10 km) in length (under ideal conditions).
 - Type 1-CB: Cisco Brand Type 1. Required in Routing Switches; acceptable in Field Switches.**
 - Type 1-CC: Cisco Compatible Type 1. Not permitted in Routing Switches; acceptable in Field Switches.**
 - b. Type 2: ZX optics for single-mode fiber that is ≤ 43 miles (70 km) in length (under ideal conditions).
 - Type 2-CB: Cisco Brand Type 2.
Product Number GLC-ZX-SM-RGD.
Required in Routing Switches; acceptable in Field Switches.**
 - Type 2-CC: Cisco Compatible Type 2.
Product Number GLC-LX-SM-RGD.
Not permitted in Routing Switches; acceptable in Field Switches.**

Delete subsection 939.2.04.A.8 and substitute the following:

8. Provide a quantity of fiber optic patch cords that matches the number of populated SFP ports on the field switch **and routing switch**, in accordance with Section 935.2.01.E, with **appropriate** connector(s) on one end (at the FPP/FDU) and an LC connector on the other end (at the field switch).

Delete subsection 939.2.05.A.8 and substitute the following:

939.2.05 Network Patch Cord Requirements

A. General (*Typo in GDOT Specs have it labeled C.*)

8. **Provide the following network patch cords (CAT6 cables) for each field switch:**
 - **3 foot long, red, quantity = 2**
 - **7 foot long, green, quantity = 1**
 - **14 foot long, blue, quantity = 1**

Add to subsection 939.2.06.A.3 the following:

939.2.06 Field Cabinet Requirements

A. General

3. Mount field cabinets in the following configurations:
 - c. Where ground or base-mounting of field cabinets is specified, make the field cabinet bottom open and provide an approved concrete pad for mounting the field cabinet along with **non-slip, fiberglass**

technician pad in front and back of cabinet doors and base mounting adapter, in accordance with Section 647 and the standard detail drawings.

- d. **Where pole mounting of field cabinets is specified, provide a non-slip, fiberglass technician pad in front and back of cabinet doors, in accordance with the standard detail drawings.**

Delete subsection 939.2.06.B.3.b and substitute the following:

B. Field Cabinet Components

3. Provide field cabinet with cabinet shelf meeting the following requirements:
- b. For Types 1, 2 and 3, equip field cabinet with one _sliding internal shelf.

Delete subsection 939.2.10 and substitute the following:

939.2.10 Security Lock Requirements

- A. **Security Lock, Type A. GDOT existing Cyberlock system.** *(Typo in GDOT Specs have it labeled C.)*
Provide Security Lock that meets the following requirements.:

...

- B. **Security Lock, Type CR. Gwinnett DOT Card Reader with Electronic Key Backup system for hub cabinets.**

Provide Security Lock that meets the following requirements.:

1. The Electro-Mechanical (EM) Lock shall:

- a. Replace entire existing ITE standard Corbin #2 (CR2) mechanical lock body and cylinder without requiring disassembly of the existing CR2 lock.
- b. Utilize the existing mounting plate and four (4) mounting screws on the existing cabinet door, without requiring modification of the mounting plate or door.
- c. Utilize pre-wired cables with Molex connectors for ease of installation and service.
- d. Be designed and manufactured to utilize and function in standard ITE cabinet prep hardware to ensure compatibility with existing doors, vertical rods, cams, and structural aluminum brackets and mounts.
- e. Be ruggedized for use in harsh applications typically found with ITS/traffic cabinet environments, and be resistant to vandalism activity.
- f. Meet or exceed NEMA TS2 standards.
- g. Be either 12v or 24v DC powered and draw 20 mA under 12vDC and 30 mA under 24vDC.
- h. Allow controlled access to cabinets through electronic programming of access control credentials (access cards, fobs, mobile devices, etc.)
- i. Work in conjunction with RFID card readers.
- j. Provide Lock State Monitoring such that unlock status and notification of mechanical key override use are both reported to the Electronic Access Control (EAC) System.
- k. Provide Electronic Cylinder with Intelligent Key override for use in the event of electronic access control system failure or power outage.
- l. Be capable of being installed and used with key override only, thus not requiring power or the EAC System, which may be added later.
- m. Operate by:
 - Access control using valid credential: (1) User places credential in front of the RFID card reader, which activates a beep and a green LED; (2) The EAC System activates power to the lock, automatically retracting the bolt so that the external swing-handle can be turned to open the door.

- **Key override (either mechanical or Intelligent*):** (1) User inserts and turns the key to retract the lock bolt, allowing the external swing-handle to be turned to open the door.
* Intelligent Key shall require a valid key that will beep and display a green LED prior to use.
- **Door closure:** (1) User closes the door and (2) returns the swing-handle to its normal secure position, which allows the lock bolt to return to its locked and secure position in the cam.

2. The Electronic Cylinder shall:

- a. Have stainless steel plug face to resist environmental conditions.
- b. Have nonvolatile memory to store 2,000 audit events, with the oldest record self-deleting after 2000 events.
- c. Record unauthorized entry attempts from keys that are not in the system, are outside of the schedule date or time range, are not programmed to open the specific cylinder, or are stored on internal blacklist.
- d. Store up to 20 blacklisted keys (keys lost or out of service).
- e. Have drill resistant inserts to improve drill resistance.
- f. Have break-away plug face that shall fail secure in the event of over-torquing.
- g. Be independently tested to meet dust and water jet IP-68 and certified to specification CEI/IEC 60529, Edition 2.1.
- h. Be independently tested to meet dust and water jet IP-55 and certified to Specification CEI/IEC 60259 Edition 2.1 and DIN EN 1303, ICS 91.190.
- i. Be independently tested to meet salt fog testing for greater than 96 hours, certified to specification ASTM-B-117 and DIN EN 1303, ICS 91.190.
- j. Be independently tested to meet Mil-STD-202G, Method 201A, 3 Axis qualification vibration testing.

3. The Electronic Key shall:

- a. Be designed to be programmed as user, control, setup, audit and operator with audit options.
- b. Function in electronic cylinders designed for both ITS/traffic cabinet electronic locks and other locking hardware that accepts SFIC formatted cores.
- c. Have an operating temperature of -4 F to 122F (-20C - 50C).
- d. Have rechargeable battery capable of approximately 1,800 cylinder openings between charges.
- e. Have a charging temperature range of 32F-104F (0C- 40C).
- f. Provide bright LED indication as follows:
 - Access granted "GREEN".
 - Access denied "RED".
 - Low Battery "Flashing RED & GREEN".
- g. Have battery level indication reporting at time of programming and during cylinder opening.
- h. Have hardened steel tip to provide long term use without replacement.
- i. Be capable of storing up to 14,000 cylinders.
- j. Automatically return unauthorized attempts from cylinders in the field to be included in software reporting.
- k. Use gold-plated, spring loaded data contacts.
- l. Have audit reporting that is configurable to be "first in first out" or to disable keys when memory is filled to prevent loss of audit trail data.
- m. Store 14,000 audit events.
- n. Support Bluetooth Low Energy (BLE) and be marked with serial number and FCC ID number for BLE.

- e. Be able to support standard data sharing to alleviate redundant data entry across other 3rd party applications (EAC systems, CCTV, Visitor Management, etc...). This may be through real-time, near real-time or by flat file interface between systems.
 - f. Allow for custom data analytics to provide security administrators ease of use in getting data into actionable formats.
 - g. Support multiple versions of RFID card integration and authentication, biometric authentication, or PIN code authentication.
9. The Electronic Key Access Control Software shall:
- a. Be Web-Hosted and Cloud-Based.
 - b. Allow access for secure operation of the Electronic Access Control system so that credentials can be programmed from client hardware having network connection to the EAC.
 - c. Be accessed by secure webpage and be hosted in a secure facility (i.e. Amazon Web Services, Microsoft Azure, etc).
 - d. Provide versatile reporting that may be exported into various file formats.
 - e. Utilize industry standard Microsoft SQL-compatible database engine.
 - f. Be able to support standard data sharing to alleviate redundant data entry across other 3rd party applications (EAC systems, CCTV, Visitor Management, etc...). This may be through real-time, near real-time or by flat file interface between systems.
 - g. Support multiple versions of RFID card integration and authentication, biometric authentication, or PIN code authentication.
 - h. Allow for custom data analytics to provide security administrators ease of use in getting data into actionable formats.

Delete subsection 939.3.01.F and substitute the following:

939.3 Construction

939.3.01 Construction Requirements

F. Security Lock

1. **Security Lock, Type A. GDOT existing Cyberlock system:**
 - a. For an existing cabinet, remove existing lock cylinder and install electronic lock.
 - b. Provide electronic key to the Department 30 calendar days prior to the installation of field cabinet(s) that require a security lock.
 - c. The Department will have 20 calendar days from the time that all keys and locks are provided to program the keys and locks.
 - d. Provide one electronic key per electronic lock. All electronic keys and locks will become the property of the Department at the end of the construction job. All keys shall be turned in to the Department's ITS Project Manager prior to the issuance of the MAL by the Department.
2. **Security Lock, Type CR. Gwinnett DOT Card Reader with Electronic Key Backup system for hub cabinets:**
 - a. Follow construction requirements set forth for Security Lock, Type A.
 - b. Installer shall be certified by the manufacturer to install and service both the mechanical and electronic product. Certification must be verified in writing by the manufacturer. This letter must be provided with the bid submittal.
 - c. Install card readers, controllers, and electro-mechanical locks as directed during normal business hours with a County representative present.
 - d. Check and adjust operation of lock units in place to ensure proper latching and locking.
 - e. Replace any units that are not fully functional when received.

Delete subsection 939.4.A, 939.4.C, and 939.4.L and substitute the following:

939.4 Measurement

A. Field Switch

Field switches (all types), with mounting hardware, will be measured for payment by the number installed, complete, functional, tested, and accepted. This price will be full compensation for labor, tools, materials, equipment, and incidentals (**power accessories, fiber and Ethernet patch cables, etc.**) necessary to complete the work.

C. Routing Switch

Routing switches (all types), with mounting hardware, will be measured for payment by the number installed, complete, functional, tested, and accepted. This price will be full compensation for labor, tools, materials, equipment, and incidentals (**power accessories, fiber and Ethernet patch cables, etc.**) necessary to complete the work.

L. Security Lock

Security lock will be measured for payment by the actual number furnished and installed. Provide lock cylinder and electronic key along with all other components and materials (**programming devices, card readers, controllers, apps, software, etc.**) required or necessary for a complete security system. This price will be full compensation for labor, tools, materials, equipment, and incidentals necessary to complete the work.

DEPARTMENT OF TRANSPORTATION

GWINNETT COUNTY

SPECIAL PROVISION

TO GDOT SPECIFICATION, 2021 EDITION

Section 942GW – ITS General Requirements

Key to styles and symbols used in this document:

Italicized Font = Direction on how to handle the section that follows.

Standard Font = Original text from GDOT specification; retained for clarification of modifications.

Bold Font = Additional or modified text.

_ (underscore) = Location where text had been removed from GDOT specification.

...(3 periods) = Location where GDOT specification text is still applicable but not duplicated here.

For GDOT Specification Section 942, make the following substitutions:

GDOT, Department, State => Gwinnett County DOT

TMC => TCC = Gwinnett County Traffic Control Center

NaviGator => Gwinnett County's instance of NaviGator

Delete subsections 942.1.04.B.2 and .4 and substitute with the following:

942.1 General Description

942.1.04 Submittal Requirements

B. Submittal Exceptions

2. For products available on the **GDOT's** QPL, select prequalified materials. _
4. QPL-listed materials are **not** exempt from selected submittal requirements **even though** they have been previously evaluated and reviewed by **GDOT**. _

Delete subsections 942.3.01.C.3.b., .c, and .i and substitute with the following:

942.3 Construction

942.3.01 Construction Management Requirements

C. Project Documentation

3. Provide detailed as-built plans that meet the following minimum requirements:
 - b. Prepare the as-built plans and show all changes and deviations from the original plans using electronic PDF, with **deviation** markups shown in red text and lines, **and built-to-plan lines in blue**.
 - c. Submit a separate Microsoft Excel file with the GPS coordinates for each **new** item (**pull boxes, ECBs, cabinets, CCTVs, poles, etc.**) with the as-built plans. The GPS coordinates shall be sub-meter or better positional accuracy.
 - i. For underground cable installations, **show conduit depths**, and refer to Section 682 for additional as-built requirements.

Delete subsection 942.3.03.B.3.c and substitute with the following:

942.3.03 Network Equipment Configuration and Integration Requirements

B. Network Equipment Configuration and Integration Procedures

3. Step 3: Complete Initial Installation

- c. Furnish network routing **switches, field switches, switch power accessories, switch mounting hardware, and SFPs to the TCC for programming. Do not boot up or access any switch.**