BID 12-162
ADDENDUM #1
October 15, 2012

Questions/Answers

1. **Bidder Checklist, Item 1** – do we need to re-submit a Contractor Questionnaire and/or Prequalification Questionnaire if we already have one on file? No
2. **Instruction to Bidders, Para 6** – Are subsurface soil maps or reports available and if so, what do we need to do to obtain them? None are available
3. **General Requirements, Para 3** – Will all drawings need to be certified by a Land Surveyor or Engineer? Will you require us to prepare as-built drawings for fiber currently installed and in place if all we are doing is fiber terminations and connections? Drawings need to be sealed by an engineer per JSP O. A description of what is required of the drawings is detailed in JSPs O, P and T.
4. **Job Special Provisions (JSP), Section G** – Are we correct in assuming that St. Charles will attempt to use the 700MHz LTE Block D Public Safety Band for their 4G connections? Not relative to this bid.
    a. If so, do you believe this project meets the Public Safety/First Responder usage requirements for 700MHz Block D per the Federal Communications Commission regulations? Not relative to this bid.
    b. Does St. Charles County have a 700MHz Block D license currently? And if not, has an application for the license already been submitted? Not relative to this bid.
    c. What is the anticipated timeframe for the tower build out in support of the 700MHz Block D LTE Band? Is a contract already in place with a vendor to build the base station? Not relative to this bid.
    d. What would be the mechanism for prioritizing communication traffic within the planned/proposed system? Not relative to this bid.
    e. During construction we would anticipate needing to use the 3G connections currently available. What are your current rates for a 3G connection and how would the billing accounts be set up for each of the devices, i.e. who will be billed for service on the 3G connections during the 280-day construction period? St. Charles County will be billed for service. St. Charles County will approve cellular turn-on thirty days prior to installation. Prior to that, the contractor is responsible for any costs incurred. Monthly service cost is not a part of this bid. Only one service provider should be selected unless it can be demonstrated that any one service provider cannot provide coverage to at least 90% of the cellular sites.
    f. Who is the 3G carrier and will they provide static IP addresses for all of the devices? The 3G carrier is not presumed at this point. Contractor will work with St. Charles and MoDOT to determine the IP addresses – refere to JSP G section 3.3. Section 2.4 states “Coordinate modem requirements and provision of service contract with St. Charles County.
    g. Who will be providing the static IP address blocks for the project and how will these be coordinated between the 3G and 4G systems? Refer to JSP G section 3.3 for guidance on IP addressing. No aspect of the future 4G system will affect this configuration.

h. Has a coverage heat map been produced showing the anticipated coverage areas for 3G and 4G coverage and if so, what do we need to do to obtain a copy? We are confident that the 3G coverage is adequate for the locations identified in the bid documents. The 4G coverage will not be provided at this time and is immaterial to the subject bid.
i. Do you have a tower site location where the 3G and 4G Base Station will be located? Not relative to this bid.
j. Are MODOT and St. Charles using the same cellular provider and equipment? Not necessarily.
k. What type of antenna is desired to be used on the cellular modem sites? Antennas should be any type that will function with the modem (modem manufacturer approved).
l. What is the current ATMS system and will this system remain in place throughout the construction phase of this project? Will integration with this system be required and if so, what are the system requirements for this system? The current MoDOT software for St. Charles County signals is ACTRA. A temporary system can be put into operation until the future ATMS system is online. See section 3.1.4 of JSP M and JSP revisions contained herein.
m. Have the future ATMS system and ATMS vendor been selected and if so, what will the future system be, who is the vendor and what are its system requirements? The future ATMS system will be determined after the award of this contract.
n. Will there be a requirement to move any work completed with the current ATMS to the future ATMS once it has been fielded? No
o. What is the ATMS vendor's contact information for questions we may have regarding ATMS integration requirements? The vendor contact info will be provided upon award of the ATMS software contract.
p. What is the Traffic Operation Center's internet capability (in MegaBits)? This does not impact the bid package.
q. What is the maximum allowable latency - for a connection? for the system? that will be acceptable by the ATMS? This will come from the ATMS vendor but it will be approximately 200 milliseconds.
r. If we must develop a test plan for the cellular modems, do you have any minimum specified requirements for the cellular radios that we will be required to test for? No, just functionality that they perform.
s. With regard to testing, how do you anticipate resolving problems at the backhaul site which we have no control over? Demarcation will be at the County's patch panel where the comm enters the building.
t. Who will be responsible for network configuration changes that will be required at the Traffic Operations Center? The new ATMS vendor working in conjunction with MoDOT.

5. **JSP, Section M** – Will we need to provide a specific software to communicate to the signals in the interim? No, the intent of JSP M Section 3.1.4 is to prevent significant downtime between removal of existing controllers from MoDOT's existing ACTRA system and installation of new controllers and ATMS software. See JSP revisions contained herein.
6. **JSP, Section S** – can you clarify or provide an example of an acceptable wiring diagram (paragraph 1.1) and shop drawing (paragraph 1.2)? Will there be no review of the wiring diagrams noted in paragraph 1.1? See Exhibits 1 and 2 for samples of MoDOT

diagrams. Non MoDOT signals can be traditional/CAD format. For wiring diagrams, once the format is set and approved, no further review will be required.

7. **JSP, Section T** – Is the contractor responsible for updating MoDOT's NexusWorx fiber management tool or will this updating be accomplished by MoDOT staff. Contractor is responsible for population by using a MoDOT approved resource (NexusWorks certified personell).
8. **Plans** – Questions regarding the published plans are as follows:
   a. Is the base spreadsheet data from the Summary of Quantities Tables available for our use in digital (MS Excel) format? It can be provided upon award.
   b. Are we safe in assuming that if a location listed in the Summary of Quantities Table isn't listed as requiring a new cell modem or new lan switch that we can consider the location as having an existing switch with fiber connectivity in place, and will this switch need to be reconfigured?
      This is correct assumption, with several exceptions. Exceptions include:
      - Existing switches may have fiber connectivity, wireless or cellular connectivity in place.
      - Site No. 140: Route A at GM Plant; does not have existing switch or existing fiber.
      - Site No. 141: Zumbehl/Route 94; plans do not call for any changes here.
      - Site No. 225: Willott Road/St. Peters Condos/Del Ray; does not have existing switch or existing fiber.
      - Site No. 259: Route 67 at Route 94; plans do not call for any changes here.
      - Site No. 293: Route A at GM East Entrance; plans do not call for any changes here.
      - Site Codes 11, 15, 148, 328, 329: plans do not call for any changes here.

      We do not anticipate that the existing switches will need to be configured; however, contractor must verify reconfiguration requirements with the new ATMS vendor.

   c. Who will complete configuration of the TMC switch/router and who is providing this equipment? The ATMS software vendor. Demarcation will be at the County's patch panel where the comm enters the building. The network addressing plan will be approved by the County prior to addressing devices per JSP G section 3.3.
   d. What is the method for interconnecting individual fiber segments back to the TMC? Fiber patch panel.
   e. Has all fiber that has been previously installed been tested and documented? All fiber was tested at the time of its installation, but that does not guarantee the present condition of fiber. Refer to JSP O for requirements regarding use of existing fiber.
   f. Are any fiber as-built drawings available and if so, how can we obtain them? Only construction plans are available, which will be provided after award. No as-builts are available that are perfect reflection of actual conditions.
   g. Can you provide us with a street address for the TMC at St. Peters? Yes - St. Peters City Hall, One St. Peters Centre Blvd., St. Peters, MO 63376
   h. Is there any possibility the bid due date could be extended due to the short time window between Pre-Bid Meeting and Bid Due Date? No

Contractor Pre-Bid Meeting – Bid 12-162
October 11, 2012
St. Charles County Administration, Room 116
Meeting Minutes

Meeting began at 2:10pm.
Introductions were made for the Consultant Team.

Dan DeArmond began with full overview of three packages: 3 procurements are planned. John Greifzu discussed that there are 9 municipalities across the County, and the County recognizes that there are technology needs to allow residents to travel across jurisdictional lines and not notice difference in operations between traffic signal operations of the various agencies. This started the Gateway Green Light project.

We are here to discuss Package 1, which includes signal upgrades/comm connections.
Package 2 will be released within a week or so of this award (October 19).

Package 3 is more ITS devices and communications related items (CCTV, travel time system). We anticipate this is 30-60 days out from being read for bid.

Package 1 Overview:
Traffic signal upgrades, communication backhaul to MoDOT TMC.
During this discussion we will cover the JSPs and point out a few items that are unique, then we will move on to Q&A.

JSP E, Order of Work: note that this JSP asks for the contractor to provide a schedule within 48 hours; this is intended to be a big picture schedule based on distributor speed of delivery, and this is needed because it will drive ATMS vendor timeline. The order of work in the JSP was originally dependent on timelines relating to the Blanchette bridge closure which is not logical anymore since this is imminent; we will accept changes to order of work based on adjustments for this issue.

JSP G, please note that MoDOT is furnishing the gear for their signals, for non-MoDOT signals the contractor is to provide and install. Difference is detailed in the quantities.
Cellular service—no preference on cellular provider. Monthly service is not part of bid. On future packages, will pull some signals off of cellular communications. So should not be part of pay item bid. For MoDOT, cellular service will be provided along with the gear.

JSP O (and JSP P & T), intent is to finish the path between Route 94 back to TMC; we did not field verify as-built conditions. Intent of JSP O and related JSPs P&T is for the contractor to do the field work, test in field and verify there is spliced path to get back to TMC; contractor must detail in the communications

drawings per JSP, receive approval and perform the work (fusion splices quantified in field—there may be overrun on this quantity). Communications drawings will have to be sealed by Missouri PE as indicated in JSP O.
JSP T; requirements spelled out in JSP. MoDOT says someone who has experience populating that tool will be acceptable, or else someone who can demonstrate knowledge of it, or else someone directly from Nexus Works staff. These are qualifications that will be required for approved staff.

Q&A Session

Request for clarification of JSP T, who is approved? MoDOT approved staff means staff that MoDOT approves of, i.e. NexusWorks certified personnel.

Who is the ATMS vendor? Sometimes this is referred to in the specs as existing vendor and sometimes referred to as future? Existing software may refer to ACTRA (MoDOTs) but future sense refers to vendor who will be selected in Package 2 for new ATMS.

Regarding page JSP-20, If software provided cannot communicate with MoDOT ACTRA system, then the vendor must provide temporary system and hook up to modot network. Most are Siemens epac which can, but when all controllers When controls are returned to operation, will The intention is when new vendor comes onboard, that vendor will install their platform and immediately begin converting existing software onto that platform. They are not going to field, they need to have controllers in NTCIP format.

Is it a concern for municipalities other than MoDOT regarding having temporary connection?
All agencies are aware of it and on board. See JSP clarification contained herein stating that all signals will be accommodated by temporary software in the interim phase.

There is no mention in specification of classes for training municipalities on how to interpret the NTCIP software or central office ATMS system, how are those going to be addressed during temporary software? We will clarify that in writing: see revised JSP contained herein.

On MoDOT furnished items, can we get a make and model of cellular equipment & LAN switch?
MoDOT will provide the part numbers for the gear they are providing for installation: LAN switch CISCO 3000 and cellular switch 5505. Cables will not be provided, only modem box only. Contractor will have to provide connection cables.

For cellular modem, has there been a study done that there is cellular service for every cellular provider? No, not every provider was checked. For the initial modem install (for 3G network) the contractor will be responsible for establishing connectivity. If not able to at a location, we will underrun that location. All cellular modem devices will be provided for MoDOT locations.

JSP page 27 states the contractor is responsible for fiber testing. Why should contractor be responsible for testing full fiber run they didn't install? Our project did not finalize the path between St. Peters/MoDOT interface and TMC. We want the contractor to do that, to test and verify the link. Because that link has not been spliced through, it has not been tested from Route 94 back to TMC. This is for contractor to verify. If broken link is found, we will overrun that fusion splice quantity to make that splice. Individual splices should be tested by contractor. Either MoDOT will repair or else quantities will be overrun to allow the contractor to fix.

Can you provide the list of cellular modems that will meet your specification for both 3G and 4G? I cannot find any. We know of at least of supplier of the modem specified.

Who is responsible for 4G upgrades? Future work, not on this package.

Who is paying cellular bill during install? We will clarify: St. Charles County will approve cellular turn-on thirty days prior to installation.

Who's standard specs govern, MoDOT or St. Charles County? MoDOT.

What equipment will be on cellular modem? LAN switch, controller, possibly other peripheral devices within the controller.

Who is going to provide IP addresses? Cellular provider will provide IP addresses. For switches, contractor will coordinate that per the bid documents.

We will issue addendum on Friday, deadline is Monday.

Ended 2:43 pm.

BID 12-162

ADDENDUM #1

JSP Revisions

E. ORDER OF WORK

The Contractor shall provide to the Engineer an anticipated work schedule within 48 hours of receipt of the Contractor's Notice To Proceed on this project.

The Contractor shall provide signal equipment and communications upgrades to the locations specified in the plans (see Exhibit A to the JSPs) on a corridor by corridor basis, and priority shall be given to the locations in the following order:

1. Locations for signals owned/maintained by agencies other than the City of St. Peters and MoDOT.
2. Locations for signals owned/maintained by MoDOT.
3. Locations for signals owned/maintained by the City of St. Peters.

L. SIGNAL CONTROLLER FIRMWARE UPGRADE

1.0 Description.

1.1 Provide and install updated firmware in the existing signal controller as identified in the procurement documents.

1.2 Inspect the existing controller cabinet prior to performing the work to ensure that the existing controller matches the table in the procurement documents since many intersections within the project are being upgraded either by the Local Agencies or concurrent projects. If the existing controller does not match the procurement documents, notify the Engineer before performing any work.

2.0 Materials.

2.1 Contractor shall verify the updated firmware is both compatible with the existing signal controller and in compliance with the signal controller NTCIP object list JSP.

3.0 Construction Requirements.

3.1 General. The contractor's work shall be performed in accordance with the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD).

3.1.1 MoDOT Locations. The following allowed work hours apply for any time signal flash operation is required:

Corridor/Signals	Work Hours
State Route K / I-70 NOR thru I-64	8:00 p.m. – 5:00 a.m.
State Route 94 / I-70 thru I-64	8:00 p.m. – 5:00 a.m.
I-70 & Zumbehl / NOR thru SOR	8:00 p.m. – 5:00 a.m.
I-70 & Cave Springs / NOR thru SOR	8:00 p.m. – 5:00 a.m.
I-70 & Mid Rivers / NOR thru S. End	8:00 p.m. – 5:00 a.m.
MO 94 & Frances Howell H.S.	6:30 p.m. – 5:30 a.m. , 9:00 a.m. – 11:30 a.m.

For all other MoDOT signals not within the limits mentioned above, work hours are restricted only from 5:30 a.m. – 9:00 a.m. and 3:00 p.m. – 6:30 p.m.

Every effort must be made by contractor to minimize flash time and/or off-line signal status.

The contractor may not perform work outside these hours without approval from MoDOT.

MoDOT is to be notified at least one working day in advance of putting a signal into flash operation.

If not otherwise listed, the signal contractor may upgrade firmware between the hours of 9:00 a.m. and 3:00 p.m. on weekdays for non-MoDOT signals. The contractor may not perform work outside these hours without prior authorization from the Local Agency. The contractor must notify the Local Agency 24 hours in advance of putting an intersection into flashing operation.

3.1.2 The signal must safely be placed into flashing operation (per the MUTCD) prior to upgrading the signal controller firmware. The contractor must notify the Local Agency 24 hours in advance of putting an intersection into flashing operation. A known good spare controller may be temporarily utilized to minimize the amount of time that a signal is in flashing operation. However, the spare controller must be from the same Agency where the work is being performed. The contractor must maintain documentation showing which controllers are in operation at any given time throughout the project.

3.1.3 The firmware shall be upgraded per the firmware manufacturer's specifications.

3.1.4 Once the firmware has been upgraded and tested, the signal shall be safely brought back into normal operation per the requirements in the MUTCD. The contractor shall also be responsible for ensuring that all existing programming is retained. This may require entries to be either programmed by hand, or edited and downloaded with the appropriate software.

3.1.5 Prior to the installation and implementation of the new ATMS, all signal controllers with upgraded firmware shall be connected to temporary remote management software or existing ATMS where applicable. MoDOT and City of St. Peters' signal controllers may be connected to the existing ATMS, if compatible, at the MoDOT and St. Peters TMCs. For MoDOT and City of St. Peters signal controllers: The contractor shall first test the communication from the controller to the existing ATMS before upgrading the firmware. Contractor shall verify the signal controller with upgraded firmware can be monitored through the existing ATMS by viewing the active status of the clock. For MoDOT and St. Peters' controllers that are not capable of communicating with the existing ATMS and for all other signal controllers with upgraded firmware the contractor shall provide remote management software and PC workstation to monitor and control the signal controllers provided by this contract until the controllers can be transferred to the new ATMS software. Contractor shall install new PC workstation with remote management software within the MoDOT and City of St. Peters TMCs. Contractor shall coordinate with MoDOT and the City of St. Peters regarding the location and interface with the existing ATMS network. Contractor shall be responsible for all equipment, material and programming costs associated with the remote management software including interfacing with the existing MoDOT and City of St. Peters network.

3.1.6 The contractor shall obtain the existing signal timing from the various agencies and verify the existing timing in the field. If the timing is different in the field, the contractor shall notify the agency to determine which timing data shall be programmed.

3.1.7 Once the signal controller is returned to normal operation the contractor will be required to demonstrate connectivity to the existing ATMS, temporary remote management software or new ATMS. Connectivity will be verified by viewing the active status of the clock.

4.0 Basis of Payment

4.1 The pay item for Signal Controller Firmware is:

Item No.	Type	Description
910-99.02	Each	Signal Controller Firmware Upgrade

M. SIGNAL CONTROLLER REPLACEMENT

1.0 Description.

1.1 Provide and install a new NEMA signal controller in the existing signal controller cabinet as identified in the procurement documents.

1.2 Inspect the existing controller cabinet prior to performing the work to ensure that the existing controller matches the table in the procurement documents since many intersections within the

project are being upgraded either by the Local Agencies or concurrent projects. If the existing controller does not match the procurement documents, notify the Engineer before performing any work.

2.0 Materials.

2.1 Contractor shall verify the new signal controller is compatible with the existing controller cabinet prior to performing any work. The new signal controller shall comply with the NTCIP object list JSP.

2.2 The new signal controllers shall either be an Econolite ASC 3/2100 or a Siemens EPAC3168M52.

2.3 The contactor shall furnish and supply all equipment and cables necessary for a fully functioning signal cabinet. If upgrading from an Eagle or Siemens controller to an Econolite controller, the contractor shall furnish and supply all equipment and cables necessary to retain functionality and maintain a fully functioning system. All work shall be performed to the satisfaction of the Engineer.

3.0 Construction Requirements.

3.1 General. The contractor's work shall be performed in accordance with the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD).

3.1.1 MoDOT Locations. The following allowed work hours apply for any time signal flash operation is required:

Corridor/Signals	Work Hours
State Route K / I-70 NOR thru I-64	8:00 p.m. – 5:00 a.m.
State Route 94 / I-70 thru I-64	8:00 p.m. – 5:00 a.m.
I-70 & Zumbehl / NOR thru SOR	8:00 p.m. – 5:00 a.m.
I-70 & Cave Springs / NOR thru SOR	8:00 p.m. – 5:00 a.m.
I-70 & Mid Rivers / NOR thru S. End	8:00 p.m. – 5:00 a.m.
MO 94 & Frances Howell H.S.	6:30 p.m. – 5:30 a.m. , 9:00 a.m. – 11:30 a.m.

For all other MoDOT signals not within the limits mentioned above, work hours are restricted only from 5:30 a.m. – 9:00 a.m. and 3:00 p.m. – 6:30 p.m.

Every effort must be made by contractor to minimize flash time and/or off-line signal status.

The contractor may not perform work outside these hours without approval from MoDOT.

MoDOT is to be notified at least one working day in advance of putting a signal into flash operation.

3.1.2 If not otherwise listed, the signal contractor may replace signal controllers between the hours of 9:00 a.m. and 3:00 p.m. on weekdays for non-MoDOT signals. The contractor may not perform work outside these hours without prior authorization from the Local Agency. The contractor must notify the Local Agency 24 hours in advance of putting an intersection into flashing operation.

3.1.3 The contractor shall pre-program the new signal controller prior to putting the signal into flashing operation in order to minimize the amount of time that the signal is in "flashing" operations. The existing programming shall be either transferred or hand-programmed into the new signal controller per the signal manufacturer's specifications. The contractor shall verify that all existing programming entries are accommodated in the new signal controller. The new coordination programming (See JSP) shall be downloaded after all of the firmware and controller replacements are performed on the particular priority route. Any special cabinet features must also be programmed and tested in the new controller. This may include, but may not be limited to video detection, optical or wired emergency preemption, advance flasher control, special event programming, special time of year schedules, flashing yellow arrows with all previous time of day programming and detector programming specific to their operation, and four-ring signal coordination. The contractor shall provide and install any additional equipment necessary to accommodate the special signal functions per the signal manufacturer's specifications. All work shall be performed to the satisfaction of the Engineer.

3.1.4 Prior to the installation and implementation of the new ATMS, all new signal controllers shall be connected to temporary remote management software or existing ATMS where applicable. MoDOT and City of St. Peters' signal controllers may be connected to the existing ATMS, if compatible, at the MoDOT and St. Peters TMCs. For MoDOT and City of St. Peters signal controllers: The contractor shall first test the communication from the controller to the existing ATMS before replacing the existing signal controller. Contractor shall power up the new signal controller from the signal cabinet and install the communication links while leaving the existing signal controller operating the intersection. The contractor may remove communication from the existing signal if the existing communication is to be used on the new controller. Contractor shall verify the new signal controller can be monitored through the existing ATMS by viewing the active status of the clock, and download controller programming from the controller to the existing ATMS. For new MoDOT and St. Peters' controllers that are not capable of communicating with the existing ATMS and for all other new signal controllers the contractor shall provide remote management software and PC workstation to monitor and control the signal controllers provided by this contract until the controllers can be transferred to the new ATMS software. Contractor shall install new PC workstation with remote management software within the MoDOT and City of St. Peters TMCs. Contractor shall coordinate with MoDOT and the City of St. Peters regarding the location and interface with the existing ATMS network. Contractor shall be responsible for all equipment, material and programming costs associated

with the remote management software including interfacing with the existing MoDOT and City of St. Peters network.

3.1.5 The signal must safely be placed into flashing operation (per the MUTCD) prior to replacing the signal controller.

3.1.6 Once the signal controller is replaced and tested, the signal shall be safely brought back into normal operation per the requirements in the MUTCD.

3.1.7 Once the signal controller is returned to normal operation the contractor will be required to demonstrate connectivity to the existing ATMS, temporary remote management software or new ATMS. Connectivity will be verified by viewing the active status of the clock.

3.1.8 Any equipment that is removed shall be returned to the respective owning agency.

3.1.9 The contractor shall obtain the existing signal timing from the various agencies and verify the existing timing in the field. If the timing is different in the field, the contractor shall notify the agency to determine which timing data shall be programmed.

4.0 Training

4.1 The contractor shall provide at their expense a minimum two-day training session for representatives from the various local agencies or their designees to learn about the replacement controllers running NTCIP protocols, and at a minimum how the timing plans are defined, timing plan pages, controller set up, chips and associated information from the equipment vendor (minimum 8 hours training). In addition, the remaining of the session shall include training on the chosen temporary software from the software vendor. No direct pay will be made for this.

5.0 Basis of Payment

5.1 The pay item for Signal Controller Replacement is:

Item No.	Type	Description
910-99.02	Each	Signal Controller Replacement

Exhibit 1 (from Q&A Item 6)

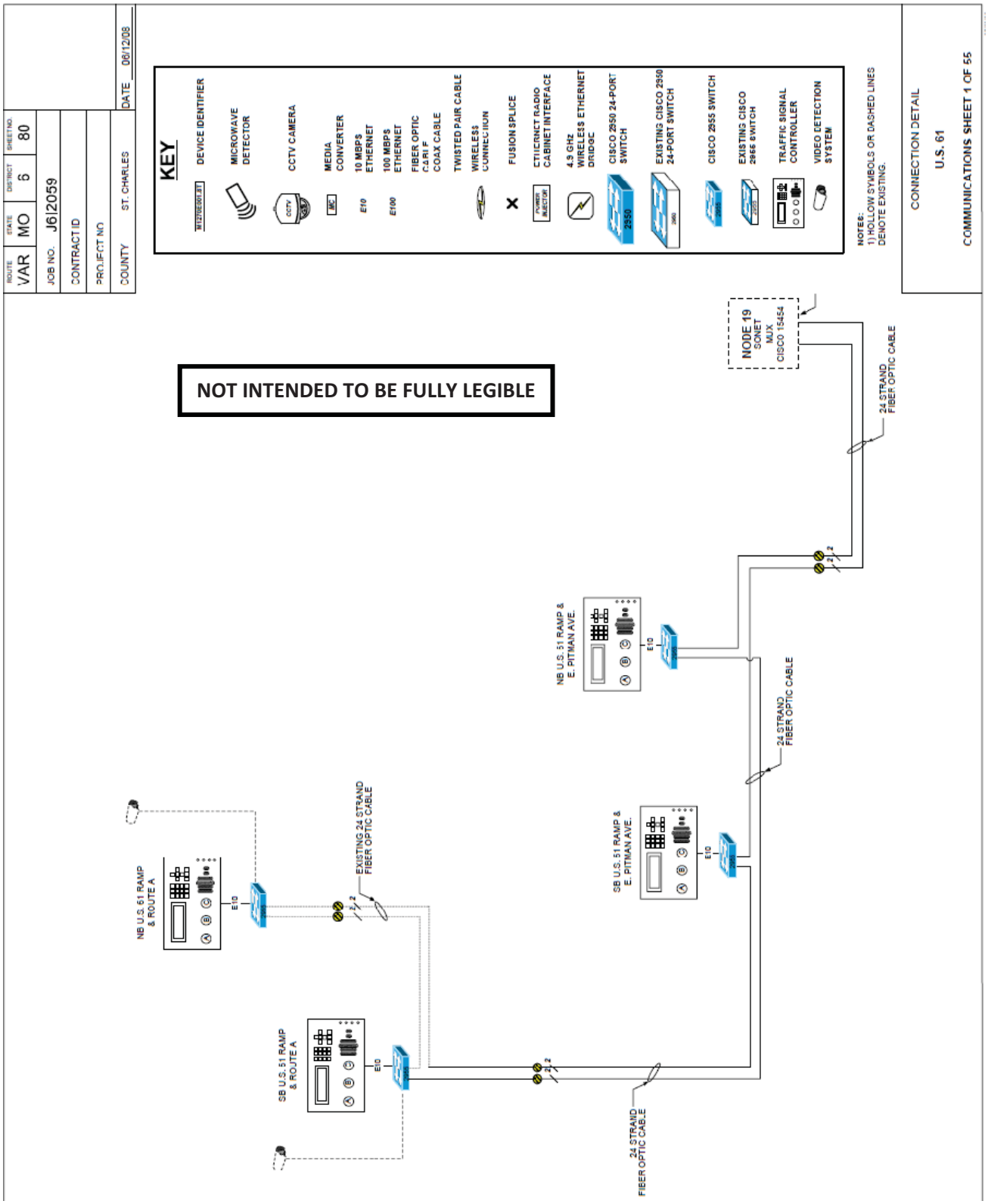

Exhibit 2 (from Q&A Item 6)