

NOTICE TO BIDDERS

Multi Conductor TV Inspection System

The Board of Public Works and Safety of the City of West Lafayette, Indiana will receive sealed bids for **one multi conductor TV inspection system** until the hour of **8:30 AM** local time on **Tuesday, January 12, 2016** at the Office of the Clerk, 222 N. Chauncey Ave., West Lafayette, Indiana 47906. All bids received by said time will be held unopened and then taken to the Board of Public Works meeting at the Morton Community Center, Multi-Purpose Room, 222 N. Chauncey Ave., West Lafayette, and there be publicly opened and read aloud. Late bids will be returned unopened. No oral, telephoned, facsimile, or email bids or changes to bids will be considered.

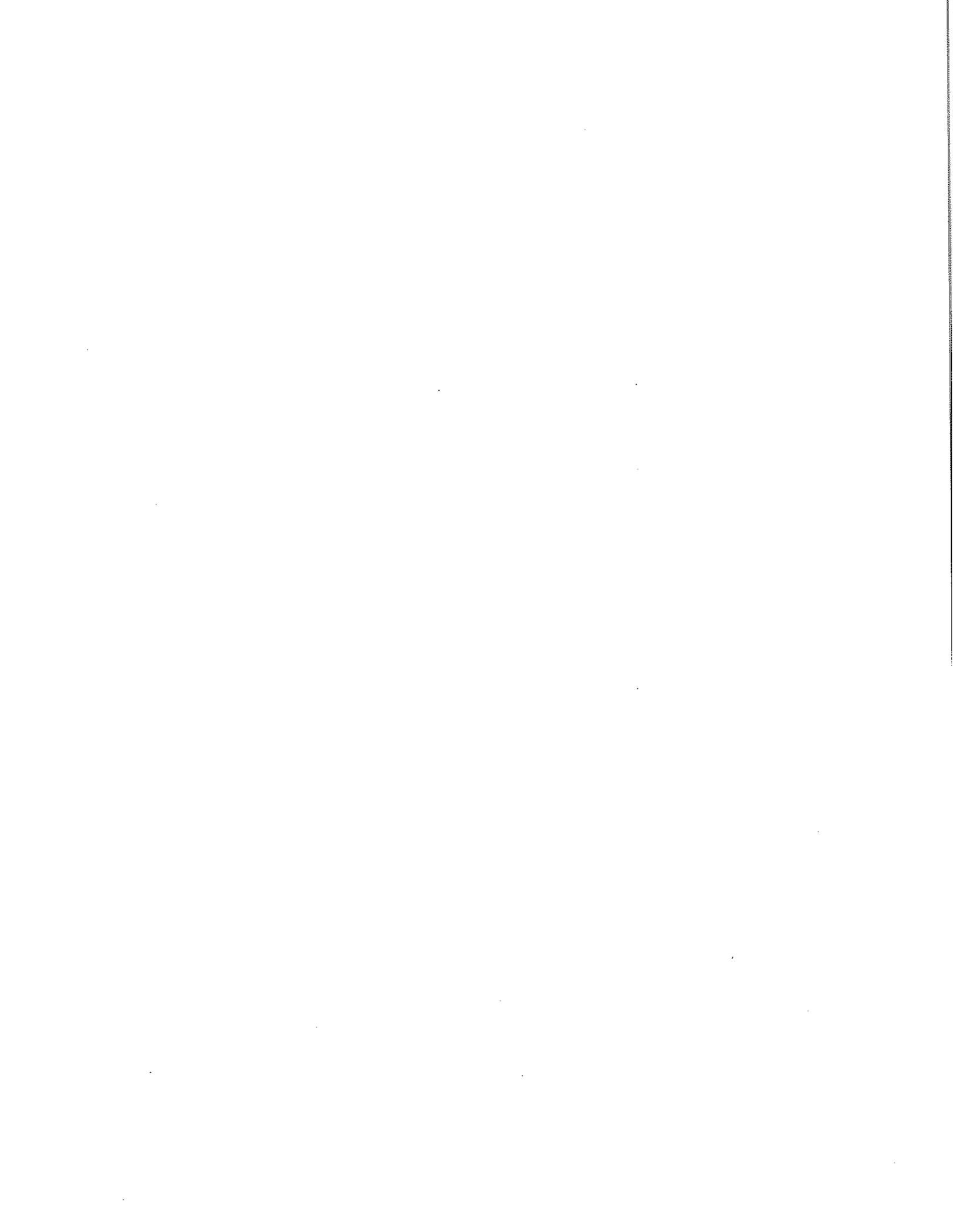
Each bidder will submit his bid upon forms provided in the bid packet and enclosed in a sealed envelope marked, "**Multi Conductor TV Inspection System.**" Specifications and bid forms are available on the City website at www.westlafayette.in.gov, at the Street Dept., 705 S. River Rd., West Lafayette, phone 775-5242, or at the Office of the Clerk.

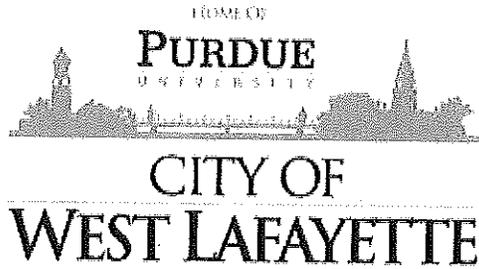
The bid must be accompanied by a bidders bond or certified check of not less than 5% of the total bid made in favor of the City of West Lafayette, Indiana

The Board of Public Works and Safety expressly reserves the right to reject any or all bids and waive irregularities of bidding.

BOARD OF PUBLIC WORKS AND SAFETY
JUDITH C. RHODES
CLERK-TREASURER

PUBLISH: December 23, 2015 and December 30, 2015





Street / Sanitation / Recycling
705 South River Road
West Lafayette, IN 47906
Phone: (765) 775-5242
Fax: (765) 746-1302

December 9, 2015

Dear Sir:

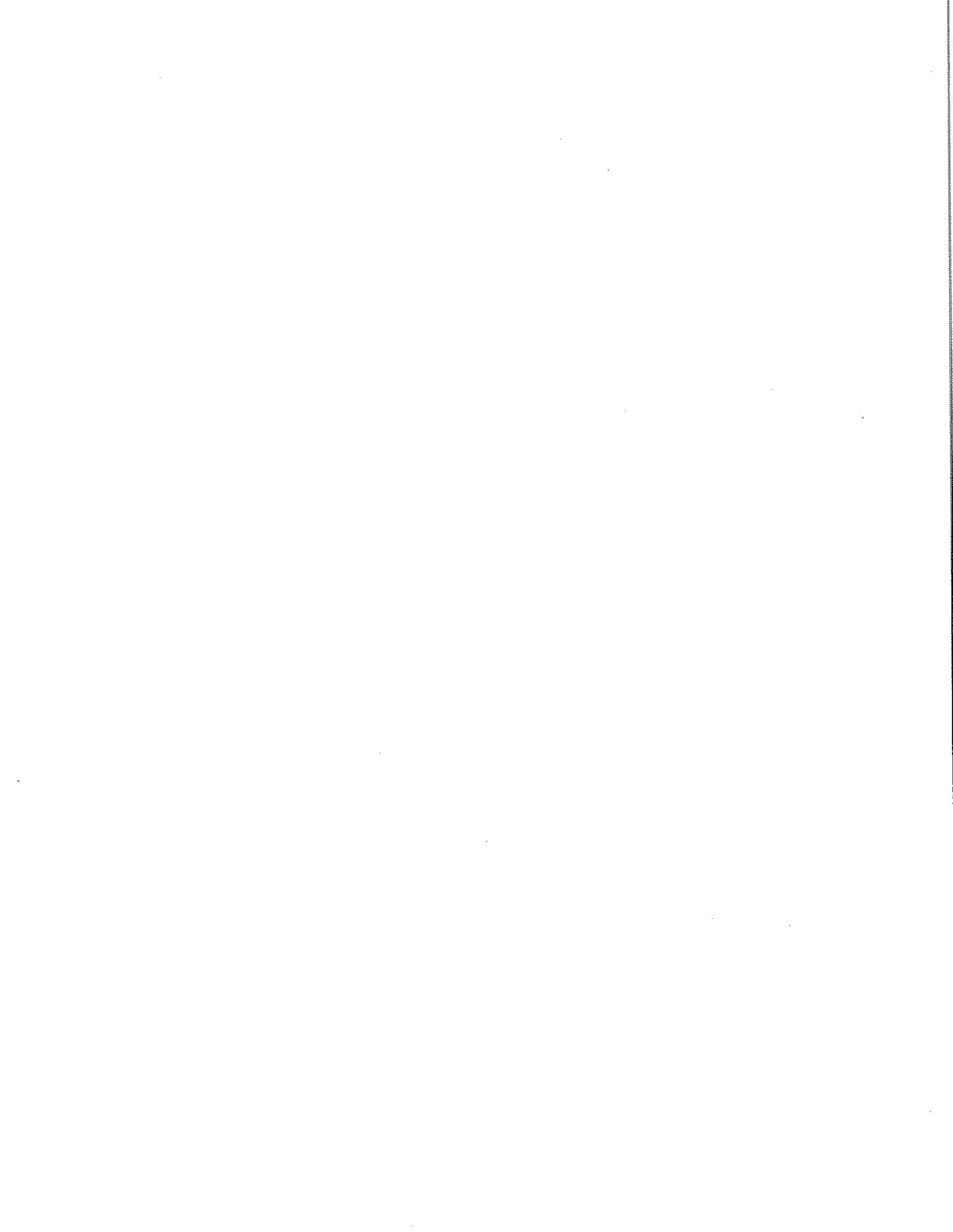
The West Lafayette Street Department is requesting sealed bids for one new multi conductor TV inspection system meeting the enclosed specifications.

SEALED BIDS will be received until 8:30 a.m. (local time) on January 12, 2016 at the Office of the Clerk, 222 N. Chauncey Ave., West Lafayette, Indiana 47906. Each dealer will submit his bid upon forms provided in the bid packet and enclosed in a sealed envelope marked, "Multi Conductor TV Inspection System". At 8:30 a.m., all bids will be taken to the Board of Works meeting at the Morton Community Center, Multi-Purpose Room, 222 N. Chauncey Ave., West Lafayette, and there be publicly opened and read aloud.

Dealer will attach any explanations and/or detail of specifications provided on a separate page(s).

Respectfully,
Tonya Vanaman

Tonya Vanaman
Receptionist/Office Assistant



FORM 1 OF 3
CITY OF WEST LAFAYETTE

<p>General: Specifications for the City of West Lafayette Street Department for one multi conductor TV inspection system mounted on a 2016 truck with 16' box bed. (Reference within the specs to a brand name or manufacturer's name or specs is for reference only). Equipment that is bid pursuant to these specifications shall be of equal quality and size, or greater, to those referenced, and are subject to approval by the purchaser. These are minimum specifications. Bidder must address compliance section. If any part of an item that is not in compliance then that item must be marked "no". An explanation can be provided on a separate sheet with the benefits of that item to the city. A no response will not automatically exclude a bid. It will be up to the purchasers discretion on what items will be termed equal. Any items not listed on the exception sheet will be assumed to be part of the unit. Bidders must submit with their bid a complete specification on the unit they purpose to furnish. Original copies of equipment literature must be provided with the bid. Fax copies or unreadable copies of literature or specifications will not be allowed. The City of West Lafayette reserves the right to reject any or all bids or any part thereof, and to waive any minor technicalities.</p>	
Equipment to be supplied: MULTI CONDUCTOR TV INSPECTION SYSTEM	Compliance
General Provisions:	
The unit must be supplied with a wired & wireless integrated hand held portable controller that must have control of all speeds and movements for the pan and tilt zoom camera, transporter, and reel. It must be able to operate from the front, rear, and up to 50 ft. from the unit within line of sight.	<input type="checkbox"/> Yes <input type="checkbox"/> No
The power supply shall have the provision for installation of a wireless receiver to communicate with a wireless hand held controller for the camera, transporter, and reel.	<input type="checkbox"/> Yes <input type="checkbox"/> No
The Optical Zoom Pan and Tilt Camera must connect directly into the transporter cradle into a built in receptacle in the transporter assembly. External cables for connecting the camera to the wheeled or tracked transporter will not be accepted.	<input type="checkbox"/> Yes <input type="checkbox"/> No
The Optical Zoom Pan and Tilt Camera must have a 4 step light enhancement feature that increases the light sensitivity of the camera when encountering challenging light conditions.	<input type="checkbox"/> Yes <input type="checkbox"/> No
The Optical Zoom Pan and Tilt Camera must have built in field replaceable lighting that provides directional lighting for 6"-48" pipe with no requirement to added external lighting. Cameras that require external non-directional lighting to be added to inspect this pipe size range will be deemed not acceptable. Cameras that do not contain field replaceable lighting will be deemed not acceptable.	<input type="checkbox"/> Yes <input type="checkbox"/> No
The Optical Zoom Pan and Tilt Camera must have built in diagnostics that display on screen on demand that include a humidity sensor, serial number, temperature sensor, camera amperage, and light voltage. Cameras without built in diagnostics will be deemed not acceptable.	<input type="checkbox"/> Yes <input type="checkbox"/> No
The Optical Zoom Pan and Tilt Camera when used with the track transporter & wheeled steerable transporter must be able to pan and tilt in a 5" diameter pipe.	<input type="checkbox"/> Yes <input type="checkbox"/> No
The Optical Pan and Tilt Camera must have the ability to accept built in directional lighting with Xenon LAMPS for 6"-42" lines. LED lamps will be deemed not acceptable. The Xenon Lamps must be field replaceable by the operator or will be deemed not acceptable.	<input type="checkbox"/> Yes <input type="checkbox"/> No
The Optical Pan and Tilt Zoom camera must have a built in sonde and the option to add built in inclinometer: Sondes mounted outside of the camera body will be deemed not acceptable.	<input type="checkbox"/> Yes <input type="checkbox"/> No
Light modules must be readily field replaceable within 10 minutes with a Phillips screw driver.	<input type="checkbox"/> Yes <input type="checkbox"/> No
The length of the steerable camera / wheeled transporter assembly cannot exceed 20". It must operate in 6" relined through 24" pipe with the addition of the pneumatic tires.	<input type="checkbox"/> Yes <input type="checkbox"/> No
The steerable wheeled compact camera transporter must be supplied with rubber tires for 6", 8", and 10"-15" pipe inspection, pneumatic tires for 15"-24" pipe inspection with heavy debris and shall have the high traction steel wheel sets for 8", and 10"-15" pipe inspections.	<input type="checkbox"/> Yes <input type="checkbox"/> No

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The steerable wheeled camera transporter and the pan and tilt optical zoom camera must be controlled via a wireless hand held pendant controller that integrates the control of all transporter motions to include speed, forward, reverse, steering and all camera pan and tilt, rotation, auto centering, iris and focus overrides plus the optional electric camera lift functions and reel functions. The integrated hand held pendant control must transmit wireless or it will not be accepted.	<input type="checkbox"/> Yes <input type="checkbox"/> No
The steerable wheeled camera transporter must have a rear tip-up waterproof bulkhead connector that minimizes the stress / strain on the connections and interface cable during insertion and retrieval. Transporters with stationary connectors that do not move to reduce the stress on the connections and interface cables will be deemed not acceptable.	<input type="checkbox"/> Yes <input type="checkbox"/> No
The steerable wheeled camera transporter shall have a built in two speed transmission that doubles the torque of the transporter drive train when the large diameter tires (7.9") are installed. Large Line kits that require assembly and disassembly when switching from inspecting small diameter pipe to large diameter pipe will be deemed not acceptable.	<input type="checkbox"/> Yes <input type="checkbox"/> No
The steerable wheeled camera transporter shall have an electric lift to optically center the camera in 15"-24" lines.	<input type="checkbox"/> Yes <input type="checkbox"/> No
The length of the self-propelled USIII transporter with the camera assembled must not exceed 23.5" length or it will be deemed unacceptable.	<input type="checkbox"/> Yes <input type="checkbox"/> No
The width of the self-propelled USIII transporter shall not Exceed 4.25" to enable full pan and tilt/ zoom capabilities in 6" relined pipe or the unit will be deemed unacceptable.	<input type="checkbox"/> Yes <input type="checkbox"/> No
The self-propelled USIII transporter shall include a built-in connector, protective housing, and locking connector to be engaged or disengaged with a "T" handle for direct insertion and removal of the Optical Zoom pan & tilt Camera. No camera interface cables shall be required. Tractors that require exterior interface cables for the camera will be deemed unacceptable.	<input type="checkbox"/> Yes <input type="checkbox"/> No
The self-propelled USIII transporter will be supplied with quick change weighted adapters to position the camera and lighting system to the centerline of the pipe, shall provide greater weight for increased traction and shall increase bottom clearance as the pipe diameter increases.	<input type="checkbox"/> Yes <input type="checkbox"/> No
The transporter shall be driven back via two modes: power reverse or freewheel reverse. Transporters that do not have free wheel reverse will be deemed not acceptable.	<input type="checkbox"/> Yes <input type="checkbox"/> No
The video cable reel must have an auto payout feature for the video cable to coordinate the speed of the video cable with the pulling speed of the camera transporter. Auto assist that does not coordinate the speed of the reel feed out with the transporter will be deemed not acceptable.	<input type="checkbox"/> Yes <input type="checkbox"/> No
The video cable shall be furnished in a length of a minimum of 1000 ft. to facilitate inspection of multiple sections with only one set up.	<input type="checkbox"/> Yes <input type="checkbox"/> No
The video cable must be a minimum of .450" diameter, have 2000 pound break strength, and weigh no more than 110lbs per 1000 ft.	<input type="checkbox"/> Yes <input type="checkbox"/> No
TV cable reel shall be heavy duty, built into a rugged steel frame designed for fixed mounting into a TV unit. The reel shall be powered by a variable speed electric motor and driven through a multi-gear ratio transmission. The transmission will have multiple speeds to limit the motor load during varying towing conditions. The reel shall be equipped with an automatic level wind assembly to evenly pay out or rewind the cable to prevent pile-ups, entanglements and burying. Light-weight aluminum frame Portable TV cable reels mounted in TV unit will be deemed not acceptable.	<input type="checkbox"/> Yes <input type="checkbox"/> No
Supplier must provide a heavy duty truck mounted steel frame video cable reel with multi conductor cable. Single Conductor video cable systems with FM modulation of the video will be deemed not acceptable.	<input type="checkbox"/> Yes <input type="checkbox"/> No
All functions of the video cable reel will be remotely controlled by the wireless hand held portable pendant. Reels that do not have this essential feature of total wireless control will be deemed not acceptable.	<input type="checkbox"/> Yes <input type="checkbox"/> No
A heavy duty truck mounted steel frame video cable reel must be provided. Lightweight aluminum frame video cable reels that are used for portable systems will be deemed not acceptable:	<input type="checkbox"/> Yes <input type="checkbox"/> No
The data acquisition software must have the ability to click on an asset and display all of the corresponding inspections in chronological order.	<input type="checkbox"/> Yes <input type="checkbox"/> No
The data acquisition system set up screen must be customizable to fit the particular set-up requirements of The City.	<input type="checkbox"/> Yes <input type="checkbox"/> No
The data acquisition system must be capable of logging continuous defects and nest various defects within the start and end of the continuous defect.	<input type="checkbox"/> Yes <input type="checkbox"/> No
The data system must be capable of burning DVD or CD media with a one-click simple path. The	<input type="checkbox"/> Yes <input type="checkbox"/> No

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software should not use third party software such as NERO to produce video / data on CD's or DVD's.	
The prospective supplier must be a registered business partner with ESRI and show proof with documentation.	<input type="checkbox"/> Yes <input type="checkbox"/> No
Supplier must be a registered business partner of ESRI and be listed on their website.	<input type="checkbox"/> Yes <input type="checkbox"/> No
Lateral Launcher will be driven by wheels.	<input type="checkbox"/> Yes <input type="checkbox"/> No
Lateral Launcher wheels will be installed or removed via single point removal.	<input type="checkbox"/> Yes <input type="checkbox"/> No
Lateral Launcher must be supplied with a front pan and tilt / zoom camera with 40:1 zoom ratio for mainline inspection and monitoring the pan and tilt mini camera for lateral inspection.	<input type="checkbox"/> Yes <input type="checkbox"/> No
The Lateral Launcher shall have ample clearance to inspect 6" mainline pipe and launch the lateral mini pan and tilt camera into lateral services entering the 6" pipe.	<input type="checkbox"/> Yes <input type="checkbox"/> No
The Lateral Launcher shall have ability to launch into lateral services reverse "WYE" with or against the flow with a lateral pan and tilt camera.	<input type="checkbox"/> Yes <input type="checkbox"/> No
The Lateral Launcher shall be able to be retrieved in either freewheel reverse or powered reverse.	<input type="checkbox"/> Yes <input type="checkbox"/> No
The lateral pan and tilt camera shall have an automatic self- leveling feature to keep the image upright within the pipe.	<input type="checkbox"/> Yes <input type="checkbox"/> No
The lateral pan and tilt camera shall have a built in sonde for locating that shall switchable frequencies to minimize the potential of interference. Sonde frequencies shall be 512 Hz and 8 kHz.	<input type="checkbox"/> Yes <input type="checkbox"/> No
The front pan and tilt zoom camera for the lateral launcher will have built in self-diagnostics to be displayed on screen by demand to include humidity, temperature, camera and light voltage, serial number, and hour meter.	<input type="checkbox"/> Yes <input type="checkbox"/> No
The front pan and tilt zoom camera shall have auto iris, auto focus, iris override, and focus override.	<input type="checkbox"/> Yes <input type="checkbox"/> No
The front pan and tilt zoom camera shall have an automatic centering feature to be activated upon demand on the controller by the operator.	<input type="checkbox"/> Yes <input type="checkbox"/> No
The front pan and tilt zoom camera shall have built in directional white LED lighting to illuminate a 6"-36" line.	<input type="checkbox"/> Yes <input type="checkbox"/> No
The front pan and tilt zoom camera for the lateral launcher shall have field replaceable lighting.	<input type="checkbox"/> Yes <input type="checkbox"/> No
The lateral camera and push cable must be able to be quickly removed to convert the unit into a pan and tilt mainline inspection transporter / camera system only with a length that does not exceed 32".	<input type="checkbox"/> Yes <input type="checkbox"/> No
The multi-conductor system shall be entirely designed and manufactured in the United States of America, by an American owned company, with a repair facility located _____ miles of our shop in _____. A single conductor system or any system not manufactured in the United States of America will be deemed unacceptable.	<input type="checkbox"/> Yes <input type="checkbox"/> No
Failure to state exceptions on any requirements will result in potential disqualification.	<input type="checkbox"/> Yes <input type="checkbox"/> No
Component List:	Compliance
"Each camera, camera transporter, and external light head to be supplied on this specification must be labeled and listed as a minimum by a Nationally Recognized Testing Laboratory (NRTL) to the applicable Standard for Safety for Closed Circuit Television Equipment, UL 2044, 2nd edition, 11/9/01. A listing report must be supplied that certifies the aforementioned equipment is acceptable as defined by 29 CFR 1910.339 and required by 29 CFR 1910.303(a). Self-certification or certification by a laboratory that is not an NRTL will be deemed unacceptable. NRTL labeled and listed equipment shall be supplied as required by the FEDOSHA memorandum, dated September 25, 2005, page 3, Section on Compliance, prepared by John L Henshaw, Assistant Secretary of Occupational Safety and Health."	
1 FORD E-450 GAS CUT-A-WAY 176" WB 2X4 CHASSIS 1 6.8L SOHC EFI Triton V10 Engine 1 5-Speed Automatic Transmission with OD including: 1 Auxiliary Cooler 1 Tow / Haul Mode 1 4.56 Axle Ratio 1 14,500 lb. GVWR 1 176" Wheel Base 1 Standard Driver / Passenger Seat with Seat Belts and Sun Visors	<input type="checkbox"/> Yes <input type="checkbox"/> No

FORM 1 OF 3
CITY OF WEST LAFAYETTE

1	12-Volt Light in Cab Area	
1	Cab Air Conditioner	
1	AM / FM Radio	
1	16' CARGO BOX WITH WALKTHRU	<input type="checkbox"/> Yes <input type="checkbox"/> No
1	Aero Cap with Walk Thru	
1	2" X 6" Dense Pine Flooring	
1	LED Light Package Includes Body Clearance and Stop / Tail / Turn	
1	Full Width Barn Doors with CAM (Pipe) Locks on Each Door	
2	Laminated Steel Lock	
1	Kemlite Covering on Inside Rear Doors	
1	Back up Alarm	
1	LED TRAFFIC DIRECTOR WITH 30FT CABLE	<input type="checkbox"/> Yes <input type="checkbox"/> No
1	FLOOR MOUNTED PEDESTAL CRANE	<input type="checkbox"/> Yes <input type="checkbox"/> No
1	SAFE ENTRY/EXIT BUMPER	<input type="checkbox"/> Yes <input type="checkbox"/> No
1	Three (3) Steps Evenly Spaced	
1	Bottom Steps Fold Up for Ground Clearance	
1	One (1) Fold - Away Safety Grab Handles	
1	TRANSPORTER/CAMERA LOCKABLE STORAGE COMPARTMENT WITH NOTCH IN REAR DOOR THRESHOLD OF BODY FOR TV CABLE TO PASS THROUGH TO TRANSPORTER STORAGE DRAWER	<input type="checkbox"/> Yes <input type="checkbox"/> No
1	Lockable Storage Compartment for Camera and Transporter	
1	Sliding Drawer	
1	Notch in rear door threshold of body for TV cable to pass through to transporter storage drawer	
1	PINTEL HITCH ON CHASSIS	<input type="checkbox"/> Yes <input type="checkbox"/> No
1	KICKPLATE 2 DRAWER ALUMINUM STORAGE	<input type="checkbox"/> Yes <input type="checkbox"/> No
1	BULKHEAD WALL BETWEEN CAB AND CONTROL ROOM	<input type="checkbox"/> Yes <input type="checkbox"/> No
1	Door	
1	TV HIGH CUBE VAN EXTERIOR LIGHTING & CONTROL ROOM TO INCLUDE:	<input type="checkbox"/> Yes <input type="checkbox"/> No
2	Amber Electronic Strobe Warning Beacons	
2	Adjustable Floodlights Rear of Vehicle Area Illumination	
	Control Room Interior:	
1	Lonseal Lonplate Flooring	
1	Kemlite Wall & Ceiling Covering	
1	Bulkhead Wall with Passage Door From Control Room to Equipment Room	
1	"Safety Plus Visual" Viewing Window in Bulkhead Wall	
1	Above Desk Control Console with Rack Mount for Electronic Equipment	
1	Desktop / Work Area	
1	110-Volt Fluorescent Light Fixture	
1	Electrical Outlet with Dual Receptacles	
1	Fire Extinguisher with Bracket, 10BC Rating	
1	Operators Chair, Swivel with Casters	
1	12-Volt Courtesy Light	
1	COOL CAT CABINET MOUNT A/C	<input type="checkbox"/> Yes <input type="checkbox"/> No
1	Cool Kat Cabinet Mounted Air Conditioner	
1	Cabinet, Hardware, and Ductwork	
1	STORAGE CABINET UNDER CONTROL ROOM DESKTOP	<input type="checkbox"/> Yes <input type="checkbox"/> No
1	EXTENDED BENCH SEAT IN CONTROL ROOM	<input type="checkbox"/> Yes <input type="checkbox"/> No
1	TV HI-CUBE VAN EQUIPMENT ROOM INTERIOR TO INCLUDE:	<input type="checkbox"/> Yes <input type="checkbox"/> No
1	Kemlite Wall & Ceiling Covering	
1	Climate Controlled Breaker Box/Electronics Storage Area with Locking Positive Latches	
1	Electrical Outlet with Dual Receptacles	
1	110-Volt Fluorescent Light Fixture	
1	12-Volt Courtesy Light with 15 Minute Timer Located at Rear Door Area	
1	LONSEAL LONPLATE FLOORING IN EQUIPMENT ROOM	<input type="checkbox"/> Yes <input type="checkbox"/> No

FORM 1 OF 3
CITY OF WEST LAFAYETTE

<p>1 20-GALLON WASHDOWN SYSTEM TO INCLUDE: 1 20-Gallon Fresh Water Tank 1 Electric Water Pump 1 Retractable Hose Reel with 25' Water Hose and Nozzle</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>1 UPPER AND LOWER STORAGE CABINET IN EQUIPMENT ROOM 1 Lower Storage Cabinet / Work Top with Sink and Faucet 1 Upper Wall Mounted Storage Cabinet</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>1 ADDITIONAL LIGHT AND OUTLET 1 Fluorescent Light and Fixture Mounted Above Work Top 1 Dual Receptacle Outlet above Work Top</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>1 7-DRAWER TOOL CHEST</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>1 SPOT LIGHT ASSEMBLY</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>1 FOUL WEATHER DOOR</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>1 4 1/2" VISE, BENCH MOUNT</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>1 32" (609.6mm) LCD REAR TV MONITOR 1 32" (609.6mm) Monitor mounted in bulk head wall 1 Cable Assembly - Video Monitor to Monitor in Control Room 1 Monitor Mounting Bracket tilting Monitor slightly downward 1 Electrical Outlet</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>1 7000 WATT GAS ONAN GENERATOR 1 120 Volt 60 HZ 7000 Watt EFI (Electronic Fuel Injection) Commercial Grade Generator 1 Gasoline Powered 1 Electric Start 1 Air Cooled 1 Generator Remote Start/Stop Cable assembly</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>1 GENERATOR COMPARTMENT [UNDER CHASSIS MOUNT] 1 Generator Storage Compartment with Lockable External Access Door 1 Commercial Power Supply Receptacle, 25' Cord, and Plug 1 Electrical Supply Center with Circuit Breaker Box 1 Commercial power and Generator Power Connectors 1 Automatic Power Transfer Switch</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>1 SYSTEM ENGINEERING PANEL, FOR POWER INFORMATION AND GENERATOR FUNCTIONS, RACK MOUNTED, TO INCLUDE: 1 Four Function AC Power Meter displaying Critical Power Information including: 1 Voltage 1 Hertz 1 Amperage 1 Active Power (Watts) 1 Front panel Selector Switch for two modes of operation: 1 Fixed reading 1 Continuous Auto-cycling 1 Generator Battery Meter to Display Starting and Charging Voltage 1 Generator Hour Meter 1 Generator Remote Start/Stop Control Switch</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>1 P&T ZOOM III M/C BUILT-IN SONDE CAMERA 1 Solid State Color Sewer TV Camera 1 Pan & Rotate Camera Head, 40:1 Zoom Ratio, 10x Optical Zoom, 4x Digital Zoom 1 NTSC Color Standard with 4x Light Integration 1 Camera Lighting System, Built In for 6" Relined thru 48" Pipe 1 Built In Transmitter, 512 Hz 1 Camera Transportation and Storage Case</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>1 BRASS COMP STEERABLE CAM TRANS, WHEELED 1 Steerable Unit Designed to Turn 360 Degrees within Its Own Radius 1 Two (2) Speed Transmission to Maximize Torque in Large Diameter Pipe with: 1 Manual Shifter on Camera Carrier 1 Unit Shall Have Forward, Free Wheel, and Power Reverse 1 Set of Driven Rubber Wheels to Inspect 6" Pipe 1 All Six (6) Wheel Drive Transporter Assembly to Include: 1 Motor & Enclosed Drive Train</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No

FORM 1 OF 3
CITY OF WEST LAFAYETTE

1	Tip up Rear 12-Pin Connector	
1	8" RUBBER WHEEL KIT FOR COMPACT TRANSPORTER	<input type="checkbox"/> Yes <input type="checkbox"/> No
1	10-15" RUBBER WHEEL KIT FOR COMPACT TRANSPORTER	<input type="checkbox"/> Yes <input type="checkbox"/> No
1	ELECTRIC CAMERA LIFT FOR COMPACT TRANSPORTER	<input type="checkbox"/> Yes <input type="checkbox"/> No
1	KIT, TIRE, PNEUMATIC, 12" - 15" PIPE, COMPACT TRANSPORTER	<input type="checkbox"/> Yes <input type="checkbox"/> No
1	8" STEEL WHEEL KIT FOR COMPACT TRANSPORTER	<input type="checkbox"/> Yes <input type="checkbox"/> No
1	10-15" STEEL WHEEL KIT FOR COMPACT TRANSPORTER	<input type="checkbox"/> Yes <input type="checkbox"/> No
1	COMPACT TRAC TRANSPORTER M/C 1 For 6" Relined Pipe Sizes with Free Wheel and Powered Reverse 1 Spare Parts Kit with additional Links and Rubber Cleats 1 Built In 6-Pin Receptacle for Direct Insertion of the Camera 1 Protective Housing for Optical Zoom Camera Pan & Tilt with Locking Feature 1 "T" Handle for Quick Removal / Insertion of Optical Zoom Pan & Tilt Camera	<input type="checkbox"/> Yes <input type="checkbox"/> No
1	7"-15" EXTENDERS FOR COMPACT TRAC TRANSPORTER	<input type="checkbox"/> Yes <input type="checkbox"/> No
1	18" - 24" COMPACT TRAC TRANSPORTER EXTENSION KIT	<input type="checkbox"/> Yes <input type="checkbox"/> No
1	SPARE PARTS KIT FOR TRAC TRANSPORTER TO INCLUDE: 1 Additional Chain Links and Rubber Cleats	<input type="checkbox"/> Yes <input type="checkbox"/> No
1	1000' CABLE ASSEMBLY, M/C 12PIN METAL 1 1000' Gold Multi Conductor Kevlar Fiber Armored Combination TV Transmission / Tow Cable 1 .450 Diameter 1 Metal Splice Chamber with Pigtail 1 Cable Strain Relief	<input type="checkbox"/> Yes <input type="checkbox"/> No
1	TV REEL ASSEMBLY, MECHANICAL FOOTAGE FOR SUMMIT .450 CABLE W/AUTO PAYOUT 1 Black Thermoplastic Powder Coated Frame 1 Power Level wind & Multi Ratio Manual Transmission 1 Automatic Cable Payout System 1 Footage Meter with Local Counter and Remote Electronic Counter 1 Transmission Control at Viewing Station 1 Local Reel Mount Electrical and Mechanical Control 1 Sealed Continuous Contact Collector Assembly 1 Removable Drip Pan for Cleaning	<input type="checkbox"/> Yes <input type="checkbox"/> No
1	DVD RECORDER SYSTEM TO INCLUDE: 1 Rack Mount for DVD 1 DVD Player / Recorder 1 Cable Assembly - DVD to Power Control Unit 1 Handheld Microphone	<input type="checkbox"/> Yes <input type="checkbox"/> No
2	19" (MINIMUM) FLATSCREEN COLOR INDUSTRIAL TV MONITOR NTSC / PAL COLOR STANDARDS	<input type="checkbox"/> Yes <input type="checkbox"/> No
1	PCU ASSEMBLY [RACK MOUNT]	<input type="checkbox"/> Yes <input type="checkbox"/> No
1	CCU ASSEMBLY [RACK MOUNT] 1 Alpha Numeric Information Display, with Multi Paging and Defect Coding 1 Remote "QWERTY" Keyboard for Data Entry 1 On Screen Footage Display 1 WRC and PACP Codes	<input type="checkbox"/> Yes <input type="checkbox"/> No
1	WIRED & WIRELESS USB CONTROLLER 1 Joystick Control for Pan and Tilt Zoom Camera to Include: 1 360 Degree Rotate 1 330 Degree Optical Pan 1 Joystick Control for All Steering Functions & Forward / Reverse Directions for Transporter 1 Camera Lift Control for Optional Electronic Camera Lift 1 All Other Controls for Camera to Include: 1 Camera Iris and Focus Override & Zoom 1 Camera Lights & Shutter Control for Light Enhancement 1 Camera Diagnostics & Auto Home	<input type="checkbox"/> Yes <input type="checkbox"/> No

FORM 1 OF 3
CITY OF WEST LAFAYETTE

<ul style="list-style-type: none"> 1 Cruise Control to Set Speed of the Transporter for Hands off Operation 1 All Reel Controls to Include: Retrieve, Release, and Variable Speed 	
1 8.7" MINI KEYBOARD	<input type="checkbox"/> Yes <input type="checkbox"/> No
1 [RACK MOUNT] COMPUTER W/GraniteNet PREMIUM TO INCLUDE (MINIMUM): <ul style="list-style-type: none"> 1 Motherboard with 1155 Socket and Intel Z87 Chipset 1 Intel Core i7-4770K Haswell 3.5 GHz Quad-Core Processor 1 8GB (2x4GB) 240-pin of DDR3 1600 SDRAM 2 LAN, On Board Network Connections, 10 / 100 / 1000 Mbps 6 USB 2.0 Ports (4 on Rear, 2 on Front) 6 USB 3.0 Ports (6 on Rear) 2 RS232 Serial Com Ports 1 Bluetooth v4.0 / v3.0 + HS 1 WiFi IEEE 802.11 a/b/g/n 1 On Board Sound 1 DVD +/- RW DVD Burner 20x / CD - RW 40x Internal 1 1 TB (7,200 RPM) SATA Hard Drive 1 120 GB Solid State Drive, SATA3 1 400 Watt 1UEPS 80 PLUS Server ATX Power Supply 1 USB Video Capture Device for MPEG 1 / 2 / 4 / WMV 1 1GB 64-bit DDR3 PCI Express Video Card 1 Industrial Hardened Case Slim 2U Design for 19" Rack 1 Windows 7 Professional 64-bit Operating System <p>GraniteNet Premium Software</p> <ul style="list-style-type: none"> 1 User Guide <ul style="list-style-type: none"> 1 USB BLACK COMPUTER KEYBOARD AND MOUSE 1 HP OFFICEJET COLOR PRINTER 1 GraniteNet PREMIUM SOFTWARE SUPPORT PLAN 1 GraniteNet OFFICE KIT 1 ESRI IMPORT MODULE GraniteNet SOFTWARE 1 GraniteNet OFFICE SUPPORT PLAN 1 DATA GIS SYSTEMS REMOTE ONLINE IMPLEMENTATION ASSISTANCE GraniteNet 1 ENTERPRISE DB MODULE GraniteNet 1 UPS TO INCLUDE THE FOLLOWING: <ul style="list-style-type: none"> 1 Input 120-Volt / Output 120-Volt 1 Cord Management Straps 	<input type="checkbox"/> Yes <input type="checkbox"/> No
1 SELF PROPELLED LATERAL INSPECTION / EVALUATION SYSTEM, WHEELED, FOR 6" - 30" MAINLINE AND 3" - 8" LATERAL INSPECTION, WITH LATERAL PAN & TILT CAMERA AND PAN AND TILT / ZOOM MAINLINE CAMERA, AND WIRELESS CONTROL TO INCLUDE: <ul style="list-style-type: none"> 1 Mainline Pan, Tilt, and Zoom Camera to Include: <ul style="list-style-type: none"> 1 Mainline Solid State Color Sewer TV Camera with: <ul style="list-style-type: none"> 1 Pan, Tilt & Rotate Camera Head 1 40:1 Zoom Ratio, 10x Optical Zoom, 4x Digital Zoom, NTSC Color Standard 1 360 Degree Range of Rotation, 270 Pan Viewing Angle, Panning 360 Degrees 1 Auto Iris, Auto Focus, Manual Override of Focus and Iris 1 Camera will also be used for: <ul style="list-style-type: none"> Monitoring Lateral Pan & Tilt Camera During Extend / Retract Operation 1 Light Assembly, Pan & Tilt Zoom Camera, 6" - 72" lines 1 White LED Field Replaceable Lamps 1 Automatic Centering 1 Lateral Pan & Tilt Camera to Include: <ul style="list-style-type: none"> 1 Solid State Color Sewer TV Camera with: <ul style="list-style-type: none"> 1 Continuous 360 Degrees Rotation, 360 Degrees Pan, and 270 Degrees Tilt 1 Sonde, Built in, for Locating Purposes with: <ul style="list-style-type: none"> 1 Switchable Frequencies, Choice of 8kHz and 512 Hz 1 Purge and Pressurization Valve, for Lateral Pan & Tilt Camera 1 Dual Wiper System Built Into Lateral Pan & Tilt Camera 1 Built in Directional White LED Lighting for Lateral Pan Tilt Camera for: <ul style="list-style-type: none"> 1 3" - 15" Line Illumination 	<input type="checkbox"/> Yes <input type="checkbox"/> No

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1	Powered Built in Self Leveling Feature, Manual Focus, and Auto Exposure	
	3 Guide Probes of varying lengths for Lateral Pan & Tilt Camera	
1	Lateral Launcher, for Lateral Pan and Tilt Camera to include:	
	1 Self Propelled Launcher Robot with Freewheel, Forward, and Power Reverse	
	1 Camera Head Mounting Assembly with Rotation Positioning, Articulating Hinge	
	1 Push Cable Drive Assembly - Two-Speed Extend / Retract Camera Positioning	
	1 Rear tip-up connector	
	1 Interconnect Cable for Launcher to Push Cable	
	1 Interconnect Cable for Control System to Power Control Unit	
	1 Single-point quick wheel removal system	
	1 6 each 3.5" diameter tires for 6" pipe	
	1 6 each 4.375" diameter tires for 8" pipe	
	1 6 each 5" diameter tires for 10"-15" pipe	
	1 Pneumatic Tire Kit for 12" - 15" pipe	
	1 Rear Housing Assembly to Add Optional Rear View Color Camera	
1	Lateral Reel / Control Assembly / Wireless Controller	
	1 Electric Reel with Automatic Level wind, Slip ring and Clutch for:	
	1 Powered Retrieve of Push Cable	
	1 Control System to Include Launcher / Self Propelled Robot Control with:	
	1 Extend / Retract, Left / Right Rotation, Camera Selection	
	1 Picture in Picture Selection / Cable Drive Speed	
	1 1000 ft. Video Cable, 8 conductor with Cable End Termination	
	1 Controller with Forward, Freewheel, and Power Reverse / Variable Speed Control:	
	1 Self-Propelled Launcher Robot	
	1 All Launcher, Camera, and Reel Functions Shall be controlled by the Wireless Hand Held Summit System Controller	
	1 Rear- View Camera	
	Color NTSC Camera	
	1 Light ring with (12) Solid State White LEDs	
QUICK CABLE LOCK PIGTAIL COUPLER KIT		
1	120' PUSH CABLE FOR LATERAL INSPECTION SYSTEM	
1	DIGITAL LOCATOR 512Hz FOR USE WITH SONDE TO INCLUDE:	<input type="checkbox"/> Yes <input type="checkbox"/> No
	1 LF2000 Receiver with Batteries	
	1 Carrying Case	
1	MANHOLE TOPROLLER ASSEMBLY, TV ONLY	<input type="checkbox"/> Yes <input type="checkbox"/> No
1	MANHOLE ADAPTER CLAW HOOK	<input type="checkbox"/> Yes <input type="checkbox"/> No
6	RETRIEVAL/DOWNHOLE POLE ASSEMBLY	<input type="checkbox"/> Yes <input type="checkbox"/> No
1	INVERT ROLLER ASSEMBLY	<input type="checkbox"/> Yes <input type="checkbox"/> No
1	RETRIEVAL HOOK	<input type="checkbox"/> Yes <input type="checkbox"/> No
1	MULTI CONDUCTOR TV ONLY TOOL KIT	<input type="checkbox"/> Yes <input type="checkbox"/> No
	1 Milliamp meter Tool	
	1 Electrical Tape	
	1 Needle Nose Pliers	
	1 Six-In-One Screwdriver	
	1 6" Adjustable Wrench	
	1 Anti Seize Grease	
	1 9-Piece Allen Wrench kit	
	1 Solder Iron Kit	
	1 Industrial Pliers	
	1 5/32 T-Handle Hex Wrench	
	1 Multi Conductor TV Only Operation Manual	
	1 Parts Catalog	
	1 Cable Repair Kit DVD	
	1 TV Only Training DVD	
4	DAYS TRAINING, ON-SITE	<input type="checkbox"/> Yes <input type="checkbox"/> No
1	TRUCK DELIVERY-INDIANA	<input type="checkbox"/> Yes <input type="checkbox"/> No
Detailed Specifications		

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FORD ECONOLINE COMMERCIAL CUTAWAY E-450 SUPER DUTY 176" DRW	<input type="checkbox"/> Yes <input type="checkbox"/> No
ENGINE 6.8L SOHC EFI TRITON V10 ENGINE	<input type="checkbox"/> Yes <input type="checkbox"/> No
TRANSMISSION 5-SPEED AUTOMATIC TRANSMISSION W/OD - including: auxiliary oil cooler, tow / haul mode	<input type="checkbox"/> Yes <input type="checkbox"/> No
AXLE 4.56 AXLE RATIO	<input type="checkbox"/> Yes <input type="checkbox"/> No
TIRES LT225 / 75R16E ALL SEASON BSW TIRES	<input type="checkbox"/> Yes <input type="checkbox"/> No
SEAT TYPE DUAL HIGH BACK BUCKET SEATS -including: inboard armrests AIR	<input type="checkbox"/> Yes <input type="checkbox"/> No
CONDITIONING MANUAL AIR CONDITIONING	<input type="checkbox"/> Yes <input type="checkbox"/> No
STANDARD EQUIPMENT	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>Mechanical</p> <ul style="list-style-type: none"> 6.8L SOHC EFI Triton V-10 engine 5-speed automatic transmission with OD -including auxiliary oil cooler, tow / haul mode 4.56 axle ratio with limited slip differential Electronic throttle control Rear wheel drive 72 amp / hour 650 CCA battery 120 amp HD alternator 4,600lb capacity twin I-beam front axle 9,500lb capacity full-floating rear axle 4,600lb capacity front coil springs 9,500lb capacity rear single stage multi-leaf springs Front stabilizer bars HD front / rear shocks Handling package Steel valve stems Power steering with HD steering gear Power 4-wheel disc brakes Auxiliary fuel port <p>Exterior</p> <ul style="list-style-type: none"> Dual rear wheels 16" X 6" white painted steel wheels LT225/75R16E all-season BSW tires Black painted front bumper with lower black plastic valence Sealed beam headlights Solar tinted glass Interval windshield wipers Manual telescoping trailer tow mirrors with manual glass and two way fold Front license plate bracket <p>Entertainment</p> <ul style="list-style-type: none"> AM / FM stereo -including: digital clock, (2) speakers <p>Interior</p> <ul style="list-style-type: none"> Dual high back bucket seats -including: inboard armrest Medium flint, vinyl seat trim Slim line color-keyed engine cover console -including: dual stowage bin, (3) cup holders Black vinyl full floor covering Tilt steering wheel Medium flint - color instrument panel -including: double 12 volt power point, tachometer 	

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<p>Key in ignition warning chime Front air conditioning Dash sound absorber Glove box with auxiliary power point Medium flint - color door trim panels with single stowage area Driver and passenger black cowl trim panels Front vinyl - faced molded headliner Dual color - keyed sun visors Light and convenience group Front dome light Front door courtesy light switches Black plastic step well pads Color - keyed cowl grab handles</p> <p>Safety 4 - wheel anti-lock brakes Driver / front passenger 2nd generation airbags Color coordinated 3-point safety belts with front outboard height adjustment Dual note electric horn</p>	
<p>16X8X7 CARGO BOX WITH WALKTHRU</p> <ul style="list-style-type: none"> ·Aero Cap With Walk-Through ·Galvanized "z" wall posts on 16" centers ·Full width "pooched" rear step bumper ·Heavy-duty cast aluminum corners ·Anti-sag roof bows on 16" centers ·Threshold flush with drain trough ·2" x 6" dense pine flooring ·.040 smooth aluminum ·LED stop/turn/tail and clearance lights ·Full width Barn doors with CAM (Pipe) Locks on each door ·Two (2) Master Lock ·Gray kemlite on inside of rear doors ·3" structural steel i-beam cross members ·Complete body skirting ·Galvaneal steel rear frame ·Drain trough on rear threshold ·Solid kick plate on bumper ·6" set-back ·Back-up alarm 	<p><input type="checkbox"/>Yes <input type="checkbox"/>No</p>
<p>LED TRAFFIC DIRECTOR WITH 30FT CABLE A LED Traffic Advisor shall be supplied.</p>	<p><input type="checkbox"/>Yes <input type="checkbox"/>No</p>
<p>SAFE ENTRY/EXIT REAR BUMPER SYSTEM (S.E.E. BUMPER)</p> <ul style="list-style-type: none"> ·Includes a total of three 9 1/2" deep X 30" wide grip strut steps - evenly spaced from the ground to the floor of the truck for maximum safety and ergonomic truck access. All three steps are centered at the rear of the truck ·Top two steps are fixed. ·Third (bottom) step hinged for ground clearance during travel (third step has pin to keep it in the up position when not in use). ·Includes two fixed side steps, approximately 32" wide each - located on each side of the center three-step section. ·Includes a hinged fold out RV style grab handle located inside of the rear of the truck to aid in entry/exit. 	<p><input type="checkbox"/>Yes <input type="checkbox"/>No</p>
<p>TRANSPORTER/CAMERA LOCKABLE STORAGE COMPARTMENT WITH NOTCH IN REAR DOOR THRESHOLD OF BODY FOR TV CABLE TO PASS THROUGH TO TRANSPORTER STORAGE DRAWER.</p>	<p><input type="checkbox"/>Yes <input type="checkbox"/>No</p>
<p>PEDESTAL CRANE</p>	<p><input type="checkbox"/>Yes <input type="checkbox"/>No</p>

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<p>A pedestal type crane shall be provided to allow the insertion/retrieval of TV inspection equipment without the need for personnel to enter the manhole. The crane shall be manufactured by a reputable crane company and include the following (minimum):</p> <p>Crane Type/Capacity Shall be a pedestal type crane with a designated lifting capacity of 1000 lbs.</p> <p>Boom Height Shall include a 15 position manually adjustable boom.</p> <p>Boom Length The boom shall have an adjustable length of 52" to 72".</p> <p>Rotation The crane shall have a 360-degree continuous manual rotation on machined surfaces with environmentally sealed needle bearings (quantity 2) and thrust bearing (quantity 1).</p> <p>Rotation Lock The crane shall have a positive locking device for securing the boom at 12 fixed points of rotation while operating the crane.</p> <p>Hoist The 12VDC powered hoist motor shall include a dual internal breaking system. The hoist shall have power up and power down.</p> <p>Cable The cable shall be 50' X 3/16" in diameter stainless steel aircraft quality cable with a single line breaking strength of 3700 lbs. and a quick release hook.</p> <p>Control A 12VDC powered hand-held pendant control, 10 feet in length, shall be furnished for controlling the hoisting function. The pendant control shall be weather resistant with a solid rubber grip.</p> <p>Power Source The power source shall be the vehicles own 12VDC battery.</p> <p>Wiring The crane shall be pre-wired from the factory and tested. The entire electrical system shall be circuit breaker protected.</p> <p>Safety The crane shall be designed and manufactured according to the applicable ANSI standards for mobile cranes. The crane shall be clearly marked with maximum load and warning decals.</p> <p>Finish Coating The crane shall be finished with a durable powder coating, semi-gloss black.</p> <p>Warranty The manufacturer shall warrant the materials and workmanship for a period of one year from the date of delivery (excluding any cable).</p>	
HIGH CUBE VAN CONTROL ROOM INTERIOR	
<p>EXTERIOR The vehicle shall include front and rear amber warning beacons mounted on the roof. The on/off switch for the beacons shall be located in the cab of the truck to give the operator the ability to turn them on before exiting the vehicle, thus enhancing the safety of the outside environment before they enter it. Beacon switches that are mounted in a location other than the cab of the truck shall be deemed unacceptable due to the inability to turn them on before exiting the vehicle.</p> <p>Dual adjustable 12V halogen floodlights (work lights) shall be mounted inside of the vehicle box, at the rear header. The floodlight placement on the inside of the box allows the operator to safely adjust them while standing on the inside of the truck box facing rearward. Floodlights that are mounted on the outside of the vehicle shall be deemed unacceptable due to the awkwardness of adjustments.</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>INTERIOR The van interior shall be divided into two areas - an Operators Control Room and an Equipment/</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No

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<p>Storage Room. A full width laminate covered bulkhead wall constructed with cabinet grade plywood with an operator pass through door will divide the two areas. The bulkhead wall will have a 3" aluminum kick plate (minimum 1/8" thick) attached at the base for protection from possible damage caused by impact.</p>	
<p>VAN CONTROL ROOM The Control Room shall be located at the front of the van body. All cabinets and hinged cabinet doors shall be constructed of 7ply cabinet grade plywood for durability. All cabinets will be mounted above the floor surface on 1/4" nylon spacers to minimize any potential water damage from absorption of water during the wash down process. Edges of cabinet doors, bulkhead doors, door cutouts, and cabinets shall have 1/8" thick aluminum trim installed on them to provide maximum protection in areas that are susceptible to potential impact. A 3" aluminum kick plate (minimum 1/8" thick) will be installed at the base of all cabinets and walls to provide maximum protection against potential damage caused by impact or moisture. Cabinets not constructed of 7ply cabinet grade plywood shall be deemed unacceptable. All hinged cabinet doors will have a metal flush (recessed) mounted positive latch, eliminating the unwanted opening of doors during transit. Plastic door latches or surface mounted barrel bolt type latches shall be deemed unacceptable on any cabinet doors.</p> <p>Cabinets installed directly on the floor surface without nylon spacers and cabinets constructed with particle/MDF board shall be deemed not acceptable due to the possibility of water damage. Cabinets installed with no protective aluminum trim for exposed surfaces and no 3 inch (76.2mm) aluminum kick plate at the base shall be deemed unacceptable due to lack of protection from potential long term impact damage.</p> <p>The Control Room floor shall be constructed of a 3/4" cabinet grade plywood substrate with 1/4" tall water relief channels attached to the bottom of the floor to prevent moisture from gathering under the floor, thus minimizing potential long term water damage. The plywood substrate shall be covered with Lonseal Lonplate flooring. The Control Room walls and ceiling will be covered with a seamless Kemlite laminate. The Kemlite laminate on the walls and ceiling shall be void of any seams or exposed screws for easy cleaning. Laminate wall and ceiling covering that is not void of seams and screws will be deemed unacceptable due to the difficulty of cleaning.</p> <p>A plywood control console shall be used for mounting all electronic components. The control console shall be designed to bring all controls within comfortable reach of the operator. The control console shall be positioned so the operator can see the Equipment Room area through a 30" X 30" (minimum) smoked Plexiglas window in the bulkhead wall. The control console shall be equipped with a 19" industrial rack mount for the electronic components. An ergonomic, recessed angled housing will be provided to house the Pan and Tilt Camera Controller, TV Reel Motor / Power Winch Controller, and the Self Propelled Camera Transporter Controller [Not Applicable on Systems using Gamepad Style Controllers]. The exact controllers furnished will be indicated on the component list. A 1" thick counter top constructed with 7ply cabinet grade plywood shall be provided. The counter top shall be covered (including the edge) with an industrial grade standard laminate (.062" thick) for durability.</p> <p>One 48" 110 VAC indirect fluorescent light shall be supplied for optimum lighting in the Control Room. Track lighting shall be deemed unacceptable due to the heat produced from the bulbs. One (1) Duplex interior electrical outlet shall be supplied in the Control Room.</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>COOL CAT CABINET MOUNT A/C An air conditioning system mounted in a cabinet located along a sidewall in the Viewing Room, shall be supplied.</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>HIGH CUBE VAN EQUIPMENT ROOM INTERIOR EQUIPMENT/ STORAGE ROOM The Equipment/Storage Room will be located in the rear of the van. The floor shall be constructed of 2 X 6 pine planks and covered with a plywood sub-floor. The side walls, rear</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>

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<p>doors, and ceiling shall be constructed of 3/8" plywood and covered with a protective washable Kemlite laminate. The Kemlite laminate on the walls and ceiling of the Equipment Room shall be void of any seams or exposed screws for easy cleaning. Laminate wall and ceiling covering that is not void of seams and screws will be deemed unacceptable due to the difficulty of cleaning.</p> <p>The electrical system shall be designed to fully meet the environmental, safety, and electrical requirements of the vehicle as specified. All electronics will be housed in a climate-controlled cabinet.</p> <p>One 48" 110 VAC indirect fluorescent light shall be supplied for optimum lighting in the Equipment Room. A 12 VDC cargo bay light will also be installed in the Equipment Room. All Equipment Room electrical boxes, outlets, and wiring conduit will be UL approved for exterior use in a wet environment. One (1) duplex interior electrical outlet will be supplied in the Equipment Room area. No exposed wiring will be acceptable. All electrical wiring shall be in accordance with applicable electrical codes including NEC. An automatic transfer switch for Shore / Generator Power shall be installed and will be activated upon receipt of power with a minimum 40 second delay to protect all electronic components and assemblies.</p> <p>Brackets shall be mounted on the passenger side rear door to hold all downhole poles, invert rollers and manhole adapter hooks when required.</p>	
<p>EQUIPMENT ROOM FLOORING The floor in the Equipment Room will be covered with Ionseal Ionplate flooring.</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>EQUIPMENT ROOM CABINERY A lower cabinet with sink and faucet shall be supplied in the equipment room. An upper storage cabinet shall be mounted over the lower storage cabinet.</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>ADDITIONAL LIGHT AND OUTLET IN EQUIPMENT ROOM A fluorescent light, fixture, and dual receptacle outlet shall be mounted above the worktop.</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>GASOLINE GENERATOR W/ELECTRIC START - 7000 WATT Generator</p> <ul style="list-style-type: none"> · Shall be the product of a firm regularly engaged in the manufacture of gasoline powered generators. · Shall be designed for commercial mobile applications capable of handling the load of intermittent heavy-duty use for sewer line television inspection units. · Shall be capable of continuously producing 7000 watts of power (58.3 amps) at 120 volts AC while rotating at 2880 RPM without undue heating, wear or vibration. · Shall be enclosed in a sound-attenuated housing and furnished with a 4-point mounting system with coil spring vibration isolators to ensure quiet operation. · Shall have a heavy-duty industrial muffler for reduced noise and ease of installation. · Shall include self-diagnostic capabilities to simplify troubleshooting. · Shall include digital voltage regulation to ensure voltage stability as loads change. · Shall include over speed/under speed protection and low power factor field overcurrent protection. · Shall include an integral USDA Forest Service-approved spark-arrestor muffler. ·Weight: 290 lb. · Size: Length-33.6 in; Width-22.2 in; Height- 16.7 in · Sound level: 60 Hz, 70dB(A) at 10 ft, typical installation, full load <p>Engine</p> <ul style="list-style-type: none"> · Shall be an OHV, 4-cycle, 90 degree V-twin, two-cylinder gasoline unit. · Power (max): gasoline fueled models: at 2800 r/min:14 hp; LP-fueled models: at 2880 r/min:11.6 hp. · Shall be designed to operate the generator at 60 cycles + or - 2 cps and shall be governor controlled to maintain these cycles under varying load conditions. · Shall be equipped with pressurized thru flow cooling system and an oil alert system to automatically shut off the engine to prevent damage when the oil level drops below the recommendation level. 	<input type="checkbox"/> Yes <input type="checkbox"/> No

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<ul style="list-style-type: none"> · Shall be equipped with electrical starting control (electronic ignition) for local and remote start/stop operation. · Ignition system: electronic magneto type with resistor plugs. · Shall include a revolving field, AC, 2-pole self-excited, two bearing alternator. · Fuel consumption: up to 1.22 gal/hr gasoline · Oil capacity: 2 quarts 	
<p>GENERATOR COMPARTMENT</p> <ul style="list-style-type: none"> · Enclosed cabinet with a fire retardant liner, locking vented door with a recessed stainless steel lock, and spark free exhaust system. · A 30-amp external shore power receptacle shall be provided. · Shore power to generator switchover shall be accomplish through a UL approved automatic changeover switch with suitable time delay to avoid damaging power surges. · A 25 foot, 30 A shore power extension cable shall be supplied. 	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>SYSTEM ENGINEERING PANEL</p> <p>The engineering panel shall provide monitoring of the power supply to the system. The panel circuitry shall be assembled in a rack-mounted chassis for installation in a built in control console. The faceplate shall be heavy gauge aluminum finished with an industrial grade surface and shall have permanent labels designating the function of the various switches and controls. Provisions shall be made on the panel for the following items:</p> <p>AC Volt Readout AC Frequency Readout (58-62 Hertz) Generator Remote Start/Stop Generator Run Time Readout</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>PAN, TILT, and OPTICAL ZOOM CAMERA</p> <p>The Pan, Tilt, and Zoom Camera shall be designed for use in 6" diameter relined pipe and larger. The unit will be designed to provide close-up views of pipe walls during inspection including minute defects and voids. The unit will be color, shall operate optimally through a maximum of 1200' multi conductor and shall consist of the following (minimum):</p> <p>Camera</p> <ul style="list-style-type: none"> · Chassis construction shall include 100% solid state circuitry designed to withstand shocks and vibration normally sustained while being pulled through a pipe. · The camera module shall be an industrial model only. · REPACKAGED CONSUMER GRADE CAMERAS (I.E. CAMCORDERS) WILL BE DEEMED UNACCEPTABLE FOR USE IN A PIPELINE TELEVISION INSPECTION SYSTEM. · Operating temperature ranges of the camera shall be 0 degrees C to 50 degrees C. · CAMERAS INCORPORATING BUILT IN LIGHTING SYSTEMS THAT GENERATE HEAT EXCEEDING THE OPERATING TEMPERATURE PARAMETERS LISTED BY THE BASE STOCK CAMERA MANUFACTURER WILL NOT BE ACCEPTABLE. · The camera shall develop a true color and transmit a sharp image picture on the video bandwidths only. · PICTURE TRANSMISSION SYSTEMS THAT REQUIRE THE USE OF R.F. SUPPRESSORS AND ARE SUBJECT TO LOCAL TRANSMITTER INTERFERENCE SHALL NOT QUALIFY AS BEING EQUAL. · Full color video bandwidths shall be provided with no sacrifice of low frequency response. · There shall be no visible streaking of the low frequency test bars when viewing a standard EIA Test Chart. · Shall not exceed an overall length of 14.5", a head length of 5.9", and a camera barrel diameter of 2.5". <p>Camera Optical & Digital Zoom</p> <ul style="list-style-type: none"> · Optical & digital zoom and zoom & focus speeds shall be selectable from the maintenance terminal. · Remote control of pan, tilt, pan and tilt homing, optical zoom, manual focus, automatic focus, shutter speed, frame integration, manual iris, diagnostics and internal lights shall be 	<input type="checkbox"/> Yes <input type="checkbox"/> No

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provided.

- Optical Zoom Range: 10x
- Digital Zoom Range: 4x (40x with optical zoom) ·Total effective zoom ratio: 40:1
- The lens shall be an automatic iris type with a manual override (controlled from the control console) to control the illumination range for an acceptable picture between 3 and 10,000 lux.

Pan and Rotate Speeds

- Full Pan (no load): 56 deg/sec, full pan in 7-8 seconds
- Full Rotation (no load): 31 deg/sec, full rotation in 10-11 seconds

Camera Housing

- The camera mechanics and electronics shall be housed in a high strength, damage resistant, aluminum housing with a stainless steel tube.
- The rear portion of the camera shall not exceed 2.5 inches in diameter to allow for operation in skids and self-propelled units that are designed for 2.5-inch diameter cameras.
- The front of the camera head housing shall have a view port of optical grade sapphire.
- The camera connector shall integrate directly to the transporter, securing with a cam-locking action for positive sealing and retention.

Mounting Fork

- The forward portion of the camera shall not exceed 4 inches in diameter and will include the mounting fork, camera head and lighting.
- The camera forks must be rounded or chamfered and be the same diameter as the forward portion of the camera to eliminate any sharp corners that can become caught on obstructions.
- CAMERA FORKS THAT EXCEED THE DIAMETER OF THE CAMERA HOUSING THAT ARE SUBJECT TO DAMAGE INSIDE THE PIPE ARE NOT ACCEPTABLE.
- The mounting fork will rotate 360 degrees with an optical viewing angle of 400 degrees and shall allow the camera head to pan mechanically 285 degrees with a pan viewing angle of 331 degrees.

Built-in Sonde

- Shall be designed to emit continuous magnetic pulses/signals with a working distance of 30' (minimum) air.
- Shall operate with any constant tone, 512 Hz receiver.
- Includes remote ON/OFF capabilities designed to preclude erroneous signals.

Camera Lighting

- Shall be remotely controlled from the control console.
- Shall be integrated into the camera and include four (4) 6W xenon incandescent lamps.
- Shall provide adequate lighting in pipe sizes from 6"-48" in diameter.
- CAMERAS THAT REQUIRE EXTERNAL MOUNTED NON-DIRECTIONAL LIGHTING FOR 12" THROUGH 48" PIPE ARE NOT ACCEPTABLE.

ELECTRICAL SPECIFICATIONS and CAMERA REQUIREMENTS Video

Output

- Multi-Conductor Version: 1 V, S/N 46dB or greater
- Single-Conductor Version: FM modulated 9.8mHz to 11.3mHz. Integrated Lights
- 4 X 6W xenon incandescent lamps
- Power Consumption: 24W max 12V
- Field Replaceable
- Illumination: 412 lumens
- Color temp: 3000°K
- Optional - field replaceable 4 X 5W white LED emitters [20W power consumption] with 480 lumens of illumination and 5500°K color temp

Image Pick-up Device

- Interline transfer 1/4 inch CCD color

Picture Elements (pixels)

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·Solid state 1/4" diagonal pixels: 768 (H) x 494 (V) = 379,392 elements (NTSC)

Lens

·10x Zoom f=4.2mm to 42mm (F1.8 to F2.9)

Digital Zoom

·4x (40x with optical zoom)

Field of View

·56° diagonal, 46° (H) wide, 4.6° (H) tele end

Resolution Lines

·470 TV lines horizontal

Electronic Shutter

·1/4 s to 1/10,000 s, 20 steps

Minimum Illumination

·1.5 lux @ F/1.8

Input Camera Voltage

·Multi-Conductor Version: 20-72V from controller

Head Rotation

·Axial Rotation: 360°

·Rotation Optical Viewing Angle: 400°

·Lateral Pan: 285°

·Pan Viewing Angle Range: 331°

·Operate in a 6" Relined Pipe

·Rotational Diameter: 4"

Internal Diagnostics

·Humidity sensor, CCD temperature, camera voltage, light head voltage, serial number identification, and operating hour meter.

·CAMERAS WITHOUT THE AFOREMENTIONED DIAGNOSTICS WILL BE DEEMED UNACCEPTABLE.

Working Pressure

·50 PSI (minimum)

Operating Temperature

·0° to 50°C

Compatible PCU's

·Multi-conductor Version: 1208 Mainline PCU and Inspector General portable PCU

Compatible Cables

·Multi-Conductor Version: Up to 1200'

Dimensions

·Overall length: 14.5", Head length: 5.9", Body tube diameter: 2.5", Head rotational diameter, 4"

Weight

·10 lbs.

SONDE SPECIFICATIONS AND REQUIREMENTS

ELECTRICAL

Field Strength

·Measurement Method: FR-1 Receiver with meter reading of "0" at 30 feet in air.

Drive Circuit

·Operating Frequency: 512 Hz.

·Frequency Control: Crystal stabilized

·Power Supply: 12 volts, shared with internal lights power supply MECHANICAL

Drive Circuit

·Square circuit board to match the inclinometer sensor footprint to ensure that the mounting hardware can be shared.

·Transmitter Antenna Coil

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<p>·Shall be built into a modified connector housing.</p> <p>SELF-PROPELLED WHEELED COMPACT CAMERA TRANSPORTER - WITH PROPORTIONAL STEERING</p> <p>A self-propelled camera transporter shall be provided for inspecting relined pipe and storm drains/wastewater pipelines measuring 6" and up in diameter. The transporter assembly shall be designed to operate optimally with 1200' multi-conductor cable and shall consist of the following (minimum):</p> <p>Transporter</p> <ul style="list-style-type: none"> ·Shall include the following (minimum) equipment: (6) Driven Wheels, available in various sizes. ·Shall operate through a minimum of (1200) feet of multi conductor video cable in suitable pipe conditions. ·Shall utilize a rear tip-up bulkhead connector to minimize stress and strain on the cable connection. The cable-to-transporter connection shall be secured via a twist-locking feature. ·The corresponding pan and tilt or pan and tilt zoom camera shall plug directly into the transporter with no external exposed cables. ·Shall include a two-speed transmission to optimize traction by doubling the torque in difficult pipe conditions or in larger diameter pipe. ·There will be a protected manual shifter assembly on the transporter to facilitate quick gear ratio changes. ·CAMERA TRANSPORTERS WITH A ONE SPEED / GEAR RATIO TRANSMISSION SHALL NOT BE ACCEPTABLE DUE TO THE SUBSTANTIAL REDUCTION OF TORQUE / TRACTION PRODUCED WHEN LARGER DIAMETER WHEELS ARE USED. ·Shall have sufficient power and traction to inspect a minimum of (1200) feet from the manhole entry point in suitable pipe conditions. ·Shall include (2) heavy-duty drive motors specifically designed to meet the power requirements of the system, regardless of size of pipe being inspected. ·The motors shall incorporate over-current protection circuitry. ·Shall be equipped with self-propelled power forward, power reverse, and free wheel capabilities. ·Shall be constructed of brass, stainless steel, and aluminum alloy. ·Shall have speed and direction controlled from the control console. ·Shall be retrievable in the free wheel mode by the video cable reel to reduce the normal wear on the drive motor by 50%. ·Shall have full, variable speed in power forward or power reverse modes. ·The maximum speed for camera / transporter assemblies shall be minimum 30 fpm in high gear for pipe configurations up to 15" and minimum 45 fpm in low gear for pipe configurations up to 30". ·CAMERA / TRANSPORTER ASSEMBLIES INCAPABLE OF OPERATING AT THE SPECIFIED SPEEDS WILL BE DEEMED UNACCEPTABLE. ·The transporter connector shall integrate directly to the camera, securing with a cam-locking action for positive sealing and retention. ·The transporter shall have a forward-locking feature to secure the camera, increasing the strength of the camera-to-transporter interface. ·The self- propelled camera carrier shall weigh a minimum of 27 lbs. ·The length of the transporter shall not exceed 14.5". ·TRANSPORTERS EXCEEDING 14.5" SHALL BE DEEMED UNACCEPTABLE. ·Shall include full proportional steering with the ability to conduct a complete 360 degree turn within its own radius. <p>Camera Compatibility</p> <ul style="list-style-type: none"> ·Shall be designed to be compatible with the CUES pan and tilt III / optical zoom pan and tilt III cameras. 	<p style="text-align: center;"> <input type="checkbox"/> Yes <input type="checkbox"/> No </p>
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- The transporter, when used with an optical zoom pan and tilt camera, shall fit into a 6" diameter relined pipe and will have the ability to operate in a 8" diameter pipe with offsets.
- ALL TRANSPORTER / OPTICAL ZOOM CAMERA COMBINATIONS THAT ARE UNABLE TO OPERATE IN 6" DIAMETER PIPE WILL BE DEEMED UNACCEPTABLE.
- ALL TRANSPORTER / PAN & TILT COMBINATIONS THAT ARE UNABLE TO OPERATE IN 6" RELINED PIPE SHALL BE DEEMED UNACCEPTABLE.
- The combined length of the transporter / pan & tilt camera assembly shall not exceed 19.56" with the camera in the home position.
- This will allow the inspection and traversal of 6" diameter pipe with off sets or meandering conditions and facilitate entry into short inverts.
- CAMERA / TRANSPORTER ASSEMBLIES EXCEEDING 19.56" IN LENGTH WILL BE DEEMED UNACCEPTABLE.

Tires

- The Transporter shall include (6) wheels, available in various sizes, designed to maximize traction in each pipe size.
- 3.5" diameter tires for 6" pipe and 6" relined pipe
- 4.375" diameter tires for 8" pipe
- 5" diameter tires for 10"-15" pipe
- 7.9" diameter tires for 18" -30" pipe
- Optional Steel Wheels are available for High Traction in 6" relined / 6" pipe
- The transporter shall be capable of inspecting pipes up to 30" diameter with the addition of larger diameter wheels.
- The (2) smaller diameter wheels, designed to help negotiate offsets in larger pipe configurations, shall remain affixed to the middle axle, regardless of pipe size to be inspected.

TRANSPORTERS DRIVEN BY BELTS WILL NOT BE ACCEPTABLE.
TRANSPORTERS WITH EXTERNAL DRIVE TRAIN COMPONENTS WILL BE UNACCEPTABLE.

* Kits contain complete sets of wheels.

ELECTRIC CAMERA LIFT

- An electronic, remote controlled, infinitely variable camera lift shall be provided to prevent the need for an operator to enter the manhole to position and/or reposition the camera height.
- Shall be constructed of stainless steel and aluminum and designed for optimum use in pipe diameters of 18" and larger.
- Shall be capable of optically centering the camera in 21" - 30" pipe.
- Shall be capable of powering the lift in both up and down directions and holding camera position throughout the defined range of motion.
- Shall be operated remotely with CUES wired or wireless camera/transporter controllers.
- Distance from camera centerline to bottom of wheel (in large tire configuration) shall be 8.7" (collapsed) and 14" (extended) to optimize camera height for image centering, negotiating obstructions, and positioning camera above flow.
- The full range of lift motion shall be achieved in 5 seconds (maximum).
- Shall incorporate both mechanical and automatic upper/lower electronic stop-features to prevent user from over-extending camera maximum height, protecting the lift drive system.
- Shall include an automatic drop-down feature when powered 'OFF' to ensure safe retrieval.
- Shall be compatible with CUES Compact Pipe Ranger transporters.
- Shall be compatible with CUES OZIII pan and tilt optical zoom cameras.
- Shall include a mechanical latching hook with steel wire cable to bypass/protect lift drive system during deployment and extraction.
- Shall be manufactured with o-rings and oil seals that are designed to prevent water intrusion.
- Shall have integrated electrical and mechanical provisions for attaching a rear viewing camera. Lift can be operated with or without the rear viewing camera.
- Shall have integrated electrical and mechanical provisions for attaching two additional

Yes No

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<p>externally mounted lights. Lift can be operated with or without external lights. ·Shall have a minimum operating input voltage of 66 volts.</p>	
<p>SELF-PROPELLED CAMERA TRANSPORTER A self-propelled camera transporter shall be provided for inspecting pipelines ranging from 6" relined to 15" in diameter with major offsets and protruding laterals. The transporter assembly shall be designed with the ability to automatically position the camera and lighting system to the centerline of the pipe being inspected while providing protection from offsets and in-line obstructions.</p> <p>Transporter</p> <ul style="list-style-type: none"> ·Shall be designed to operate with any multi-conductor system. ·Shall include the following (minimum) equipment: Weighted Track Width Adjustment Bars and Spare Parts Kit. <p>Tractor / Camera length not to exceed 23.5" with the optical zoom pan & tilt camera mounted or the unit will be deemed not acceptable.</p> <ul style="list-style-type: none"> ·The tractor shall provide line entry through inverts with limited space and traverses 22, 45, and 90 degree sweeps in smaller diameter lines. ·The width of the transporter shall not exceed 4.25" to enable full pan and tilt / zoom capabilities in 6" relined pipe or the unit will be deemed not acceptable. ·The tractor shall include a built-in connector, protective housing, and locking connector to be engaged or disengaged with a "T" handle for direct insertion and removal of the optical zoom pan & tilt camera. No camera interface cables shall be required. <p>Tractors that require exterior interface cables for the camera will be deemed not acceptable.</p> <ul style="list-style-type: none"> ·Shall include a waterproof motor with bulkhead connector to protect against leaks and motor damage. ·Shall be equipped with a dual fastened, rubber cleat, and power track drive system designed to maximize traction in each pipe size and ensure cleat life; contoured high traction cleats shall provide maximum wall contact for greater traction. ·Shall be equipped with self-propelled power forward, power reverse, and free wheel capabilities to provide high-speed retraction without running over the cable and easier to back out of a dropped manhole. ·Shall have full, variable speed in power forward or power reverse modes. ·Shall be capable of inspecting pipes 6" relined to 24" in diameter (See Weighted Track Width Adjustment Bars below). ·Shall have speed and direction controlled from the control console; user shall have the ability to optimize inspection speed to match the pipe size and conditions. ·Shall include self-cleaning, agricultural type, steel sprockets to provide maximum performance in mud/ sand and to prevent chain binding. ·Shall include a heavy-duty drive motor specifically designed to meet the power requirements of the system, regardless of size of pipe being inspected. ·Shall be retrievable in the free wheel mode by the video cable reel to reduce the normal wear on the drive motor and drive train by 50%. ·Shall include a kit containing additional chain links. ·The transporter, when used with the pan and tilt optical zoom camera III, shall fit into a 6" diameter relined pipe and will have the ability to operate in 6" or 8" diameter pipe with offsets. <p>All transporter / optical zoom camera combinations that are unable to operate in 6" diameter relined pipe will be deemed unacceptable.</p> <p>Weighted Track Width Adjustment Bars</p> <ul style="list-style-type: none"> ·Weighted track extenders shall be provided to position the camera and lighting system to the centerline of the pipe being inspected; shall provide greater weight for increased traction and 	<p style="text-align: right;"><input type="checkbox"/> Yes <input type="checkbox"/> No</p>

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shall increase the bottom clearance as the pipe diameter increases.

- Weighted adapters shall be 'Quick Change' with one heavy-duty fastener and 2 - 3/8" diameter pins for structural support.

- Various types and quantities of shaft extenders and pipe adapters shall be provided for 6" relined to 15" pipe sizes.

- Transporter weights shall increase for each pipe size as follows:

Pipe Size (Inches)	6"	8"	10"	12"
Weight w/Camera (Lbs)	33	36	TBD	TBD
Weight w/o Camera (Lbs)	24	27	TBD	TBD

Powered reverse only transporters, which have the potential of running over the cable termination during retrieval operation, thus requiring the operator to coordinate the speed of the transporter with the speed of the video cable reel, shall be deemed unacceptable. However, powered reverse shall be supplied to facilitate precise inspections and backing out of dropped manholes.

COMBINATION VIDEO TRANSMISSION/TOW CABLE, KEVLAR FIBER ARMORED, - MULTI-CONDUCTOR

Yes No

A combined video and towing cable shall be furnished in a continuous length of 1000 feet (minimum) and shall consist of the following (minimum):

Cable

- The cable shall consist of a coaxial core wrapped with a braided wire shield ground return.
- An additional braided wire shield shall encircle both the coax and ground return and shall act as a Faraday shield.

·CABLES WITH ONLY A SINGLE BRAIDED WIRE SHIELD ACTING AS A GROUND RETURN SHALL BE DEEMED UNACCEPTABLE.

- A total of 10 separately insulated and color-coded 18/20 gage standard copper conductors shall be bundled and twisted in groups of 3 with one conductor remaining single.

- To prevent cable breakage when placed under load, all wire bundles, wires, and the coax shall twist in a serpentine pattern for the entire length of the cable so that all wires, including the coax, are the same total lengths.

·CABLES THAT HAVE A 'CENTER' COAX, MAKING IT THE SHORTEST AND THEREFORE THE MOST EASILY BROKEN CONDUCTOR, SHALL BE DEEMED UNACCEPTABLE.

- The cable diameter shall be no greater than .450 inches and shall be able to withstand external pressures of up to 400 psi.

- The cable weight shall not exceed 110 lbs. per 1000 feet.

Cable Jacket

- The exterior of the cable shall consist of a minimum 1/16" thick abrasion resistant high-density nylon composite outer jacket embedded with Kevlar fibers to provide the cable with the required towing tensile strength.

- Shall provide a lower coefficient of friction to reduce drag and therefore increase its resistance to wear.

Cable Connection

- The end of the multi-conductor cable shall be equipped with a waterproof scotchcast and/or waterproof metal splice chamber to allow for the direct wiring of the female connectors.

- An adjustable strain relief shall be provided to transfer the cable towing strength from the cable to the camera skids or transporter.

- The termination shall consist of the necessary connectors and dummy plugs.

Yes No

TV CABLE REEL ASSEMBLY

A TV cable reel assembly will be supplied with a minimum storage capacity for 1000' of 1/2" or 5/8" maximum diameter video transmission cable. The reel shall be chain driven and properly

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reinforced to withstand 200% of the maximum motor torque to insure trouble-free operation. The reel shall be powered by a variable speed electric motor and driven through a multi-gear ratio transmission. The transmission will have multiple speeds to limit the motor load during varying towing conditions. The reel shall be equipped with an automatic level wind assembly to evenly pay out or rewind the cable to prevent pile-ups, entanglements and burying. The reel shall be built into a rugged frame designed for fixed mounting into a unit. The TV reel shall include a stainless steel drip pan that is removable for complete cleaning. The stainless steel drip pan shall be removed by unpinning it, then sliding it out from below the reel towards the rear of the truck. The reel shall have a black thermoplastic powder coated frame that provides excellent corrosion and UV protection and is resistant to chemical such as acids and alkalis. The reel drum and level wind shall be open to view to allow for inspection during operation. TV REEL SYSTEMS THAT ARE NOT CONTROLLED REMOTELY OR DO NOT HAVE A MULTI RATIO TRANSMISSION WILL NOT BE ACCEPTABLE.

TV CABLE REEL SLIP RING ASSEMBLY

The reel shall be equipped with a continuous contact rotary slip ring assembly. The assembly will be equipped with a minimum of twelve (12) slip rings to conduct the necessary current and signals through the reel. SLIP RING ASSEMBLIES WITH LESS THAN TWELVE (12) RINGS WILL NOT BE ACCEPTABLE. The slip ring assembly shall be fully enclosed in a dust and weatherproof high strength aluminum housing. Systems equipped with the high maintenance copper slip ring assemblies shall not be considered acceptable. Mercury Slip Rings shall not be considered acceptable.

CABLE FOOTAGE METER, LOCAL/REMOTE ELECTRONIC READOUT

The unit shall be equipped with a distance counting meter designed to accurately measure cable travel in feet and tenths of feet. The metering head shall be constructed of machined cast aluminum parts and shall include the necessary sheaves, wheels and guides. The counter shall be equipped with a meter for use at the rear of the unit and an electronic counter, which is connected to the Data Display System at the operator's station.

TV CABLE REEL CONTROL REMOTE AND LOCAL

A gearshift selector and linkage shall be provided at the control console to operate the reel mounted transmission. The combination of the reel motor controller and transmission gearshift selector will maximize the efficiency of the television inspection operation and minimize the load on the reel and motor. A speed controller, gearshift selector and on/off switch shall be provided at the reel for local control during set up.

TV CABLE REEL/AUTOMATIC PAYOUT SYSTEM

The TV cable reel assembly shall be equipped with an automatic cable payout system that controls the payout of the cable in accordance with the speed of the corresponding camera transporter from the reel by positioning a roller that activates a sensor, shutting the power to the reel motor ON or OFF. The payout system shall be deactivated when the DIRECTION switch is in the "IN" position. The TV reel shall include a stainless steel drip pan that is removable for complete cleaning. The stainless steel drip pan shall be removed by unpinning it, then sliding it out from below the reel towards the rear of the truck. The reel shall have a black thermoplastic powder coated frame that provides excellent corrosion and UV protection and is resistant to chemical such as acids and alkalis.

A control panel shall be furnished to operate the TV Cable Reel Motor. It shall be located at the front of the Reel Assembly. The control panel shall be equipped with an ON/OFF switch that includes an ON indicator light, an AUTO-PAYOUT ACTIVE caution light, an EMERGENCY STOP button, an IN - OUT DIRECTION switch, a LOCAL CONTROL switch that is capable of transferring the reel control from the hand controller to the local control and a REEL SPEED control knob that shall automatically disable the payout reel speed function when the direction of the reel is changed without returning the payout reel speed control knob to zero speed.

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<p>Controllers that do not include an "emergency stop" switch will not be acceptable. TV Cable reels without automatic payout systems will be deemed not acceptable.</p>	
<p>DVD PLAYER/RECORDER A DVD recorder shall be provided to permanently record on DVD any transmission from the closed circuit television camera. The recorder shall have one disc. It shall record using two(2) types of disc, DVD-RW and DVD+RW as well as write-once DVD-R discs. Both video and audio signals may be recorded at the same time.</p> <p>The DVD recorder shall be rack mounted in the Control Console. Desk mounted recorders that are subject to damage during travel will not be acceptable.</p> <p>Number of Disc (1) DVD Recording Media: DVD-R, DVD-RW, DVD+RW Recordable DVD Playback DVD-r, DVD-RW, DVD+r, DVD+RW DTS-Capable CD-R Capable S-Video Inputs - 2 Rear/1 Front</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>19" (MINIMUM) FLATSCREEN COLOR INDUSTRIAL TV MONITOR NTSC / PAL COLOR STANDARDS</p> <ul style="list-style-type: none"> · Shall be a high quality, ultra-thin, industrial grade color unit. · Shall be a desk-mounted computer display in the Viewing Room of the vehicle. · Shall be compatible with both NTSC and PAL signals; shall include an auto-detect function that has the ability to identify the signal that's being input and automatically switch from NTSC or PAL. · Shall have the ability to automatically monitor / adjust the video input and optimize the display settings without manual adjustments. · Shall include an On-screen Menu for adjusting monitor parameters. The menu shall include a user-friendly graphical interface to guide users through the customization of features and individual preferences. · Shall operate from 120V AC or 230V AC power sources. · Shall be black in color with a metallic finish. 	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>PCU ASSEMBLY A fully integrated camera, lighting, and crawler control system, built into rack-mounted chassis's for installation in a built in control console consisting of a Power Control Unit (PCU) and a Camera Control Unit (CCU) not occupying more than 8-3/4" vertical rack height, shall be provided.</p> <p>The Power Control Unit (PCU) portion of the Control Center must be capable of operating a mini camera, pan & tilt camera, pan & tilt zoom camera used with skids or a steerable tractor without the use of external adapter modules.</p> <p>The PCU shall provide all the necessary power to operate and monitor the television inspection system. The faceplate shall be heavy gauge aluminum finished with an industrial grade finish. The PCU shall operate from a 110VAC or 220VAC 50Hz. or 60 Hz. power source. All circuits shall be of solid state design. Circuits shall be isolated to provide operator protection from electrical shock hazards.</p> <p>The PCU shall contain a solid state light head power source, a left transporter motor power source, a right transporter motor power source, and a camera power source. All four power sources will include electronic over current protection to protect connected equipment from excess current. The PCU circuit protection will prevent damage to the PCU in the event of a cable short and shall recover immediately without operator action after the short condition is removed. All four power supplies shall be voltage controlled and current limit controlled by the CCU without operator action.</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>CCU ASSEMBLY The CCU shall connect to and control all functions of the PCU, the camera, and the transporter. The CCU faceplate shall be heavy gauge aluminum finished with an industrial grade finish.</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No

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<p>External connections shall include two buffered external video monitor outputs, two USB ports, audio and video VCR/DVD input/output plugs. The CCU will also include hardware and software to display video, system configuration and diagnostic conditions with a built-in alpha/numerical video character generator. The character generator shall generate footage count, defect information, and/or free-form comments, for display on a video monitor and video recording device.</p> <p>The CCU software shall be field upgradable with a USB thumb drive. The CCU shall also be capable of full external control by Asset Inspection/Decision Support software. The CCU Software will include cable diagnostics which can determine an open or short in the mainline cable. It will also allow monitoring of the voltage and current on all four power supplies and testing the handheld controller.</p> <p>A standard (IBM) "QWERTY" keyboard shall be provided for generating defect and commentary entry. The format and position of the on-screen data shall be adjustable, within the video display, to fit pipe conditions or operator requirements. An inspection report can be saved and exported in an ASCII file format. The data generator shall have the capability send an inspection report copy containing contract data, footage and defects to a USB thumb drive. The inspection report shall include the following minimum information: date of inspection; pipe size, material, total length; upstream access location; downstream access location; direction of inspection (N-S-E-W and upstream/downstream); name of line; lateral location and footage; observations and comments (6 lines) , 55 preprogrammed defect codes and 70 user definable.</p>	
<p>PORTABLE CONTROLLER</p> <p>A hand held portable controller for a pan & tilt type camera, steerable transporter and reel will be provided. The controller will be capable of wired operation, and include a weatherproof 24 key membrane panel with indicator lights. Joystick controls will be provided for camera pan and tilt operation and transporter forward, reverse and steerable functions. Camera controls will include focus and iris override, zoom, lights and light intensity, pan and tilt homing, one button auto focus, and diagnostics. Transporter controls will include cruise control and camera lift operation. Reel controls will include retrieve and release mode, and speed [Not applicable on Dolly applications]. The controller shall be fabricated of a high impact plastic material, and housed in a neoprene boot for protection. A holster shall be provided for storing the remote at the control unit</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>UPS</p> <p>Output</p> <ul style="list-style-type: none"> ·Output Power Capacity: 600 Watts / 1000 VA ·Nominal Output Voltage: 120V ·Output Connections: (4) NEMA 5-15R (Surge Protection); (4) NEMA 5-15R (Battery Backup) <p>Input</p> <ul style="list-style-type: none"> ·Nominal Input Voltage: 120V ·Input Connections: NEMA 5-15P ·Cord Length: 1.83 meters <p>Batteries and Runtime</p> <ul style="list-style-type: none"> ·Battery Type: Maintenance-free sealed lead-acid battery with suspended electrolyte: leakproof Included Battery Modules: 1 ·Typical recharge time: 8 hour(s) Replacement battery cartridge: RBC32 ·RBC Quantity: 1 ·Typical Backup Time at Half Load: 14 minutes (300 Watts) Typical Backup Time at Full Load: 4 minutes (600 Watts) <p>Communications & Management</p> <ul style="list-style-type: none"> ·Control panel: Multi-function LCD status and control console ·Audible Alarm: Alarm when on battery : distinctive low battery alarm : overload continuous tone alarm <p>Surge Protection and Filtering</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No

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- Surge energy rating: 355 Joules
- Filtering: Full time multi-pole noise filtering : 5% IEEE surge let-through : zero clamping response time:meets UL 1449
- Dataline protection: Network Line - 10/100/1000 Base-T Ethernet (RJ-45 connector), Coaxial cable for CATV/SATV/modem/Audio/Video (Coax connector)

Physical

- Maximum Height: 250.00 mm
- Maximum Width: 100.00 mm
- Maximum depth: 382.00 mm
- Net Weight: 10.73 KG
- Shipping Weight: 12.73 KG
- Color: Black

Environmental

- Operating Environment: 0 - 40 °C
- Operating Relative Humidity: 0 - 95%
- Operating Elevation: 0-3000 meters
- Storage Temperature: -5 - 45 °C
- Storage Relative Humidity: 0 - 95%

Conformance

- Regulatory Approvals: FCC Part 15 Class B, TUV, UL Listed ·Standard Warranty: 3 years repair or replace
- Environmental Compliance: ROHS, REACH: Contains No SVHCs
- Specifications subject to change; component list and detailed specifications reflect equipment to be supplied (minimum); additional options are available

SELF PROPELLED LATERAL INSPECTION / EVALUATION SYSTEM, WHEELED, FOR 6" - 30" MAINLINE AND 3" - 8" LATERAL INSPECTION, WITH LATERAL PAN & TILT CAMERA AND PAN AND TILT / ZOOM MAINLINE CAMERA, AND WIRELESS CONTROL

Yes No

The self-propelled lateral inspection / pan and tilt mainline inspection system II shall be designed to operate in 6" - 15" mainline sewer pipes and lateral pipes 3" and larger in diameter. The system shall be able to accomplish pan and tilt inspection of the mainline and view the lateral services, and a second camera will be supplied to enter the lateral service from the mainline to inspect up a maximum of 120 feet (dependent on push cable length selection) into the lateral. The multi-conductor system shall operate on up to 1000' cable utilizing dual cable reels only and shall have the ability to simultaneously display both mainline and lateral footage. The self-propelled lateral inspection / pan and tilt mainline inspection system shall be compatible with additional mainline television inspection equipment.

The self-propelled lateral / pan and tilt mainline inspection system shall consist of the following:

- Self-propelled lateral launcher, wheeled
- One color mini camera for lateral launching
- Lateral Camera lighting system - (1) integral light ring
- Mainline pan and tilt zoom camera built into the LAMP II, with built in white LED directional lighting for 6"-30" lines
- Camera centering ball
- 120 ft. fiberglass push cable assembly
- Reel with electric retrieve, variable speed control, and clutch for lateral push cable / camera
- All necessary interconnect cables
- The self-propelled launcher carrier shall be a variable weight design and shall consist of the following (minimum):
- Four rubber wheel sets shall be supplied to inspect 6"-15" mainline pipe.
- Optional high traction wheel sets shall be available to inspect 6"-15" pipe with appreciable

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amounts of grease.

SELF-PROPELLED LATERAL INSPECTION SYSTEM LAUNCHER

A self-propelled launching robot shall be furnished to propel the small diameter pipe push camera from inside the mainline pipe a maximum of 120 lineal feet (dependent on push cable length selection) up to the lateral. The Launcher shall consist of the following (minimum):

- The launcher shall fit the shape of the pipe and perform the rotation, extend and retract camera-positioning functions.
- The launcher will be provided with 120 ft. of combination push cable/TV cable with powered retrieve electric reel and the necessary connecting cables.
- The launcher shall be able to fully function within a 6" diameter mainline sanitary sewer or it will be deemed unacceptable.

- The self-propelled transportation platform for the launcher shall have forward, reverse and free wheel functions with a maximum speed of 60 feet per minute (relative to tire size).
- The Lateral launcher will have a built in rear tip up connector to minimize all stress on the video cable connections during insertion and retrieval. Launchers with stationary rear connectors which do not provide this additional strain relief will be deemed unacceptable.

Tires

- The lateral launcher shall include (6) wheels, available in various sizes, designed to maximize traction in each pipe size.
- 6 each 3.5" diameter tires for 6" pipe.
- 6 each 4.375" diameter tires for 8" pipe
- 6 each 5" diameter tires for 10"-15" pipe
- LAUNCHERS driven by belts will not be acceptable. Launchers with external drive train components will be deemed unacceptable.

MAINLINE PAN & TILT AND LATERAL AND MAINLINE INSPECTION COLOR CAMERAS

The Self-Propelled Lateral Inspection System shall include two cameras. One pan and tilt zoom camera with a 40:1 optical / digital zoom ratio shall be provided to provide pan and tilt / zoom viewing of the mainline pipe and monitor push camera operation, and one mini camera with auto upright imaging and a built in sonde for camera locating to inspect the lateral service. The pan & tilt camera shall be mounted on the front of the Self Propelled Lateral Launcher, and the other camera shall attach to the 120 ft. push cable designed to operate in 3" and greater house lateral pipes. Self-Propelled Lateral Inspection Systems without pan and tilt / zoom mainline inspection capabilities shall be deemed unacceptable.

MINI PAN & TILT CAMERA, LATERAL

- The Pan & Rotate Camera shall be specifically designed to operate in 4" to 12" pipe.
- Shall be manufactured with solid state circuitry to withstand shocks and vibrations.
- Shall include variable focus, fixed iris, and auto speed shutter.
- Shall include continuous pan & rotate.
- Shall include automatic self-leveling operation for upright camera picture.
- Shall include lens wiper for cleaning during operation.
- Camera sensor shall feature a 1/3" Interline Transfer CCD with a pixel resolution of 768(H) x 494(v)
- Camera head shall feature the NTSC color standard with 420 lines and 60 fields/second
- Shall include a light head containing a minimum of 6 spot and 6 flood light emitting diodes for optimum illumination.
- Lighthead shall include variable light intensity to provide adequate lighting in 4 inch to 12 inch pipe sizes.
- The LED's shall be recessed and enclosed within the camera head to prevent damage from obstacles in the pipe. Systems with exposed bulbs subject to breakage will not be acceptable.
- Shall be manufactured with a high strength, hard, anodized aluminum alloy and stainless

Yes No

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steel.

- Shall include a dual 512 Hz and 8kHz sonde internal to the camera head for accurate camera location in both metallic and non-metallic pipes.
 - Sonde frequency shall be menu selectable via the quick access button on the keyboard.
- Sonde transmitters not integral to the camera head will be deemed unacceptable.
- Shall include a built-in lens wiper to keep the camera lens clean and free of debris.

Color Compact Pan & Tilt / Zoom Camera (for mainline and monitoring lateral camera)

- Shall have an optical visual range of 236 degrees tilt/rotate and 285 degrees pan.
- Shall be fully capable of mainline inspection and viewing of lateral services accomplished by a one-pass inspection with or against the flow.
- Shall have the ability to monitor the insertion of the lateral inspection camera into the lateral service.
- Shall have a 40:1 total effective zoom ratio
- Shall have 10:1 optical zoom ratio
- Shall have a 4:1 digital zoom ratio
- Shall have automatic centering feature for camera position and orientation
- Shall include built in camera diagnostics to display the following readings on screen upon demand of the operator: serial number, hour meter, humidity inside the camera, camera temperature, camera voltage, and light voltage. Cameras without the aforementioned built in camera diagnostics will be deemed unacceptable.
- Camera to have automatic focus, automatic iris, with remote focus and iris override

Both Cameras

- Shall utilize white LED lighting
- Shall be manufactured with solid state circuitry to withstand shocks and vibrations. · Shall be capable of providing greater than 520 lines of resolution.

REAR-VIEWCAMERA

The rear-view camera shall be designed to facilitate the internal inspection of pipelines to provide cable management and avoid obstacles / potential tip-overs by providing visibility when retrieving the lateral and mainline inspection system or driving in reverse. The camera shall be designed to operate in conjunction with the customer's new or existing lateral and mainline II inspection system and shall consist of the following (minimum):

Camera Assembly

- The camera field of view shall be a minimum of 53 degrees vertical, 67 degrees horizontal, and 79 degrees diagonal.
- Operating temperature ranges of the camera shall be -10 degrees C to +40 degrees C. Cameras incorporating built in lighting systems that generate heat exceeding the operating parameters listed by the base stock camera manufacturer will be unacceptable.
- Depending on the specific wheel configuration(s), shall operate in 6" diameter pipe up to 48".
- Chassis construction shall include 100% solid state circuitry designed to withstand shocks and vibration normally sustained during an inspection.
- Shall be available in NTSC and PAL formats.
- Shall work in conjunction with new or used lateral and mainline II inspection systems. A retrofit kit shall be available.
- Shall work with both lateral and mainline II fiberglass and stainless steel push systems.
- Shall be able to toggle between the front, rear, and lateral camera imagery by using the switch that's installed on the truck panel or PCU.

Camera Housing

- The camera mechanics and electronics shall be housed in a high strength, watertight, damage resistant, aluminum housing.

FORM 1 OF 3
CITY OF WEST LAFAYETTE

<p>Lightring Assembly</p> <ul style="list-style-type: none"> · Shall include a 12 LED self-contained infrared light ring designed to allow for a clear picture in the pipeline. · Camera shall be able to automatically detect low-light conditions and switch from a color image to an infrared-illuminated monochrome image to provide the maximum amount of illumination required for the inspection. <p>Electrical Specifications & Camera Requirements</p> <p>Format</p> <ul style="list-style-type: none"> · NTSC / PAL <p>CCD type</p> <ul style="list-style-type: none"> · Color / IR Mode (black and white) <p>CCD Pixels</p> <ul style="list-style-type: none"> · 537(H) x 505(V) NTSC · 537(H) x 597(V) PAL <p>Image Sensor</p> <ul style="list-style-type: none"> · 1/3 inch CCD color <p>Lux Rating</p> <ul style="list-style-type: none"> · 3.0 color mode, 0 in IR (black and white) mode <p>Resolution</p> <ul style="list-style-type: none"> · 380 TV Lines <p>Power Requirements</p> <ul style="list-style-type: none"> · 19-50 VDC <p>Power Consumption</p> <ul style="list-style-type: none"> · 250mA <p>Dimensions</p> <ul style="list-style-type: none"> · 6.00" L x 2.50" W x 4.40" H <p>Lens Focal Length</p> <ul style="list-style-type: none"> · 3.6mm F2.0 <p>Signal to Noise Ratio</p> <ul style="list-style-type: none"> · greater than 45db (AGC off) <p>Output Type Video Level</p> <ul style="list-style-type: none"> · 1Vpp Composite @ 75 OHM <p>Electronic Shutter</p>	
<p>MANHOLE TOP ROLLER ASSEMBLY A manhole top roller assembly shall be provided to protect the TV cable entry at the manhole cover ring. The roller assembly shall be a welded steel frame incorporating a minimum 6" diameter cast aluminum roller.</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>MANHOLE ADAPTER HOOK A manhole adapter hook will be supplied to secure the guide system to the manhole ring.</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>RETRIEVAL/DOWNHOLE POLE ASSEMBLY 4.8 foot (57.5") quick coupling spring loaded extension pole will be supplied to connect to the down hole cable guides. To minimize weight, the quick coupling extension poles shall be constructed of .125" thick fiberglass tubing with an outside diameter of 1.25". The fiberglass tubing shall consist of 1 ounce continuous strand matt encapsulated with vinylester resin. The weight per each pole shall not exceed 2.8 lbs. The extension poles shall be corrosion resistant and orange in color to ensure visibility for added safety.</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>INVERT ROLLER A manhole cable guide roller shall be provided to protect the TV cable and/or winch cable from damage during the inspection. It shall be constructed of aluminum to minimize weight and be equipped with a corrosion resistant pulley. The minimum pulley bend radius shall be 6".</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No

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CITY OF WEST LAFAYETTE

TV MAINTENANCE TOOL KIT A kit containing sets of tools as listed herein shall be furnished. The kit shall contain the necessary items to field-test, adjust and repair a number of components on the television systems. This kit must include: volt OHM test meter (0-600 milliamps), Allen wrench set, and soldering kit.	<input type="checkbox"/> Yes <input type="checkbox"/> No
INSTRUCTION AND TESTING The supplier shall fully instruct and test buyers in the operation of the equipment furnished after delivery. The instruction period shall be of sufficient duration (number of days shown on the component list) to fully familiarize the buyers operating personnel. The instruction and testing shall be conducted by the supplier's field service technician and shall include component familiarization, theory of operation, equipment operation, field procedures, techniques of use, troubleshooting, maintenance recording and logging of sewer conditions and safety procedures. Training provided by sales or office personnel will not be acceptable.	<input type="checkbox"/> Yes <input type="checkbox"/> No

Bidder: _____
 Company

Signature: _____

Title: _____

Date: _____

**City of West Lafayette
Multi Conductor TV Inspection System Bid**

**Bid FORM 2 of 3
Bid PRICE SHEET**

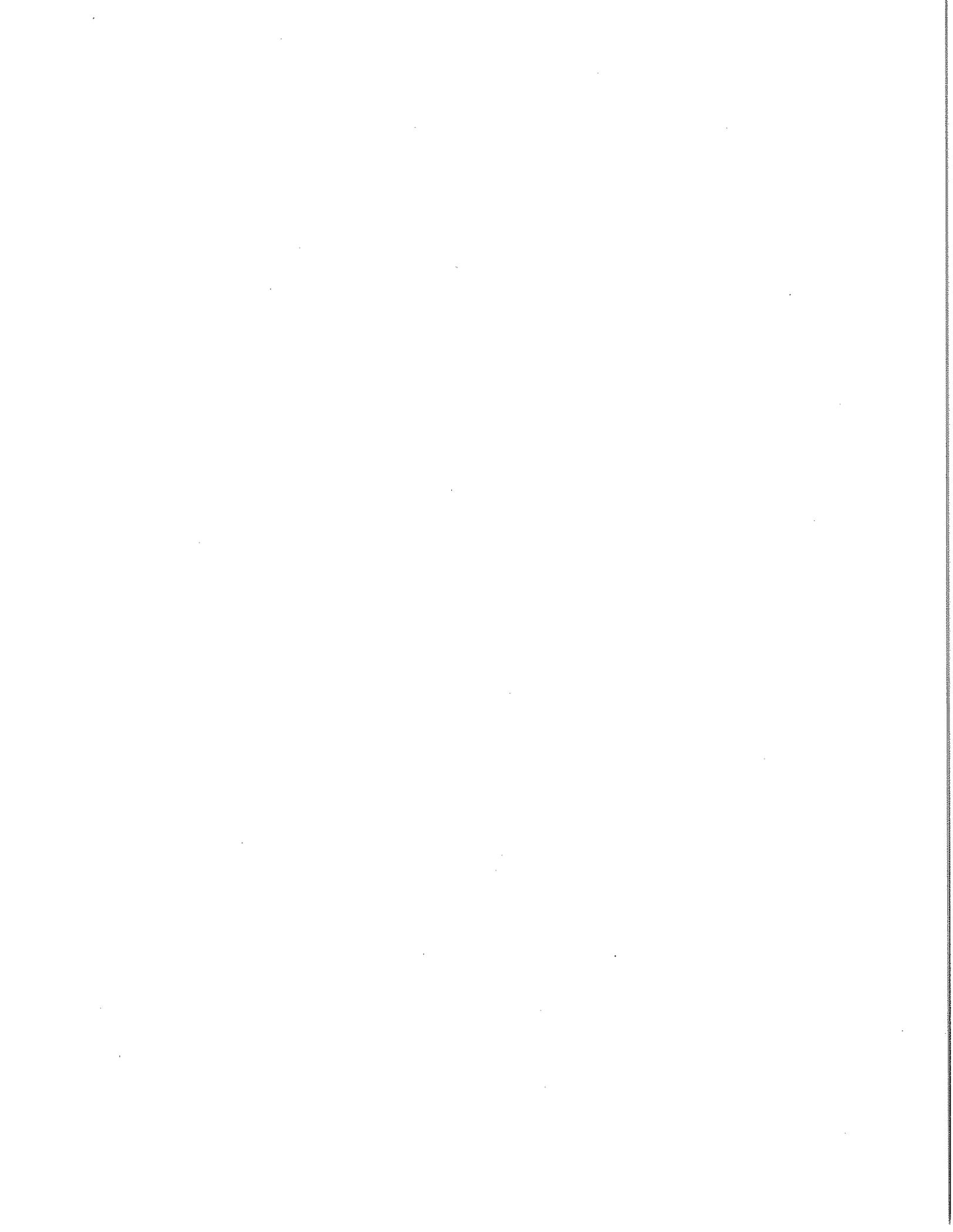
Make & Model _____

ITEM	UNIT PRICE	QUANTITY	TOTAL AMOUNT
Base Price			
Option (if applicable) Costs			
Discounts or Other Price Adjustments			
Destination Charges			
Dealer Preparation Charges			
Any Additional Charges			
Trade-In Allowance			
TOTAL BID			

Bidder: _____
 Company

Signature: _____ Title: _____
 Name

Date: _____



CITY OF WEST LAFAYETTE
NON-COLLUSION AFFIRMATION

STATE OF INDIANA

COUNTY OF: _____ } SS:

The undersigned offeror or agent, duly swears, under penalties for perjury, that he has not, nor has any other member, representative, or agent of the firm, company, corporation or partnership represented by him, entered into any combination, collusion or agreement with any person relative to the price to be offered by any person nor to prevent any person from making an offer nor to induce anyone to refrain from making an offer and that this offer is made without reference to any other offer.

Offeror (Firm)

Signature of Offeror or Agent

Before me, a Notary Public in and for said County and State personally appeared, _____, who acknowledged the truth of the statements in the foregoing affirmation on this _____ day of _____, 20 ____.

My Commission Expires:

(written)

Notary Public

(printed)

County of Residence: _____

