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**SOUTHFIELD PUBLIC SCHOOLS
INVITATION TO BID
Closed Circuit Television Camera Systems**

The Southfield Board of Education will accept bids for a Closed Circuit Television Camera Systems for Southfield Lathrup High School and Birney Middle School.

All bids are to be delivered to:

**MS. MARTHA RITCHIE
PURCHASING MANAGER
SOUTHFIELD PUBLIC SCHOOLS
24661 LAHSER ROAD
SOUTHFIELD, MI 48034**

Bids are to be in a sealed envelope clearly marked "**Closed Circuit TV**" and returned no later than 2:00 p.m. E.S.T., Monday, June 13, 2005 at which the bids will be opened and publicly read. Bids must be submitted on the official **FORM** provided. The Board reserves the right to reject any or all bids. Bids received after the due date specified above will not be accepted.

All bidders must provide familial disclosure in compliance with MCL 380.1267 and attach this information to the bid. The bid shall be accompanied by a sworn and notarized statement disclosing any familial relationship that exists between the owner or any employee of the bidder and any member of the board, intermediate school board, or board of directors or the superintendent of the school district, intermediate superintendent of the intermediate school district, or chief executive officer of the public school academy. The [District](#) shall not accept a bid that does not include this sworn and notarized disclosure statement.

Bids must be accompanied by a satisfactory bid bond or verified check payable to Southfield Public Schools in the amount not less than five percent (5%) of the total bid.

INSTRUCTIONS TO BIDDERS and CONDITIONS:

1. Bids are due Monday, June 13, 2005 at 2:00 p.m. in the front lobby of the J.W.E. Administration Building, 24661 Lahser, Southfield MI 48034.
2. The Board reserves the right to reject any and all bids or waive any part thereof. Bids received after the due date will not be accepted. Federal, state or local taxes are NOT to be included in price. Bids to remain firm for 60 days.
3. Any questions are to be directed to Martha Ritchie, (248) 746- 8519.
4. REFERENCES: The contractor must provide the names, addresses and telephone numbers of at least three accounts of similar size, schools preferred.
5. TERMINATION: The Southfield Public Schools reserves the right to terminate any award to the bidder for cause, without liability, upon 30 days notice from the Purchasing Manager or his authorized representative.
6. INSURANCE REQUIREMENTS: The contractor will secure and maintain during the term of the contract insurance from and insurance company authorized to do business in the State of Michigan that will protect the School district from all liability (public liability, personal injury and property damage) claims which may arise from operations under the contract. The contractor may not start work until evidence of all required insurance has been submitted and approved by the school district. The contractor must cease work if any of the required insurance is canceled or expires. Certificates of insurance shall be submitted for approved by the school district prior to the execution of the contract.

The Certificate shall specifically name the school district as an additional insured party.

The certificates must contain the agreement of the insurance company notifying the school district in writing ten (10) days prior to any cancellation or material alteration of the policy. The limits of insurance shall not be less than the following:

- A. Workers Compensation Insurance in the amount required by Michigan Law.
- B. General Liability: Bodily Injury and Property Damaged Combined
Each occurrence \$1,000,000
Personal Injury \$ 1,000,000
- C. Automobile Insurance for vehicles: Bodily injury each person \$500,000
each accident \$500,000, Property damage each accident \$500,000

7. INSPECTION OF WORKSITE: Before submitting a bid, each bidder shall inspect the site of the proposed work to arrive at a clear understanding of the conditions under which the work is to be done. He will be held to have compared the premises with the specifications, and to have satisfied himself as to all conditions affecting the execution of the work. Claims for extra payments based on lack of knowledge of existing circumstances will not be allowed.
8. ALTERNATES: A catalog, description, or a brand and model designation when provided is included in the specification to establish minimum levels of performance, characteristics, quality, capacities, features, workmanship and materials. Alternate suggestions may be offered if deviations from specifications are minor and if all deviations are properly outlined on an attached sheet, failure to outline all deviations may be grounds for rejection of your bid. The district will consider any alternates submitted, but reserve the right to reject low bids which are not considered equal as determined by the purchasing manager.
9. All bidders must provide familial disclosure in compliance with MCL 380.1267 and attach this information to the bid. The bid shall be accompanied by a sworn and notarized statement disclosing any familial relationship that exists between the owner or any employee of the bidder and any member of the board, intermediate school board, or board of directors or the superintendent of the school district, intermediate superintendent of the intermediate school district, or chief executive officer of the public school academy. The District shall not accept a bid that does not include this sworn and notarized disclosure statement.
10. Bids must be accompanied by a satisfactory bid bond or verified check payable to Southfield Public Schools in the amount not less than five percent (5%) of the total bid.

Specifications

SCOPE: The Southfield Public Schools District is seeking proposals to furnish and install a closed circuit camera security system at Birney Middle School and Southfield Lathrup High School.

Birney Middle School

1. Birney Middle School: Vendor to supply and install security equipment at Birney Middle School. Birney is located at 27225 Evergreen Road, Southfield, Michigan, 48076.
The district seeks to install closed circuit television (CCTV) cameras to remotely monitor main areas and critical access points. A schematic is included that outlines location of doors and required cameras. The district seeks a system that would enable office personnel to view visitors by CCTV.

Office equipment:

- High resolution color monitor (2@ each) to view spot (motion) and main
 - Pelco Model PMCS17A
- Digital Video Recorder with 500GB,
 - Pelco Model – DX8000-500DVD
 - Pelco flat screen monitor Model – PMCL15A
 - SBC DSL for remote viewing
- Power supply – 24 volt AC
 - Pelco Model MCS16-20B
- Color duplex multiplexer, 16 camera
 - Pelco Model – MX4016C
- Color monitor and wall mount
 - Pelco Model PMC21A
 - Pelco Model MRWA3050

CCTV Locations:

CCTV cameras will be installed at locations around the school to allow administration and office staff personnel the ability to view important doors and main hallways. All cameras will be recorded and can review recorded images locally and remotely. In addition, the camera at doors 1 & 2 will allow office personnel the ability to view person(s) prior to granting access to the building. Other cameras will monitor activity within the building. A diagram of the location of all cameras can be found on the specification page after the list of cameras. Please ignore reference to intercom and card access system as the district is not purchasing these items at this time.

Camera 1:

External camera (Pelco Model ICS300-CRV3A) located outside of door 1 and able to view any person requesting access into the building.

Camera 2:

External camera (Pelco Model ICS300-CRV3A) located just outside of door 2 and able to view person(s) requesting access into “A”.

Camera 3:

An internal camera (Pelco Model ISC090-CRV4A) located outside of the office that will view door 3 to record persons entering, the hallway outside of the office and part of “B” wing looking south.

Camera 4:

An internal camera (Pelco Model ISC090-CRV4A) inside of the office to view and record the counter area while visitors would normally be located.

Camera 5:

An internal camera (Pelco Model ISC090-CRV4A) located halfway between doors 1 and 2 which would look north in wing “C” rooms C100, C102 and the library.

Camera 6:

An internal camera (Pelco Model ISC090-CRV4A) looking north at the intersection of the D, E, and F wings.

Camera 7:

An internal camera (Pelco Model ISC090-CRV4A) looking west by room D110 to view the hallway and all persons who enter through door 4.

Camera 8:

An internal camera (Pelco Model ISC090-CRV4A) looking east between rooms F109 and F110 to view the hallway.

Camera 9:

An internal camera (Pelco Model ISC090-CRV4A) looking south between rooms E109, E106, and dining hall.

Camera 10:

Internal camera (Pelco Model ISC090-CRV4A) looking north on “C” wing second floor.

Camera 11:

An internal camera the same as camera 10 on the second floor looking south.

Camera 12:

External camera (Pelco Model ISC300-CRV3A) located at roofline outside of room F107 looking south to view parking lot and entrance door 1.

Camera 13:

An external color camera (Pelco Model ISC300-CRV3A) located at the roofline of room B106 to view entrance door and temporary classrooms - view should also include the outside exit door of girls shower.

Camera 14:

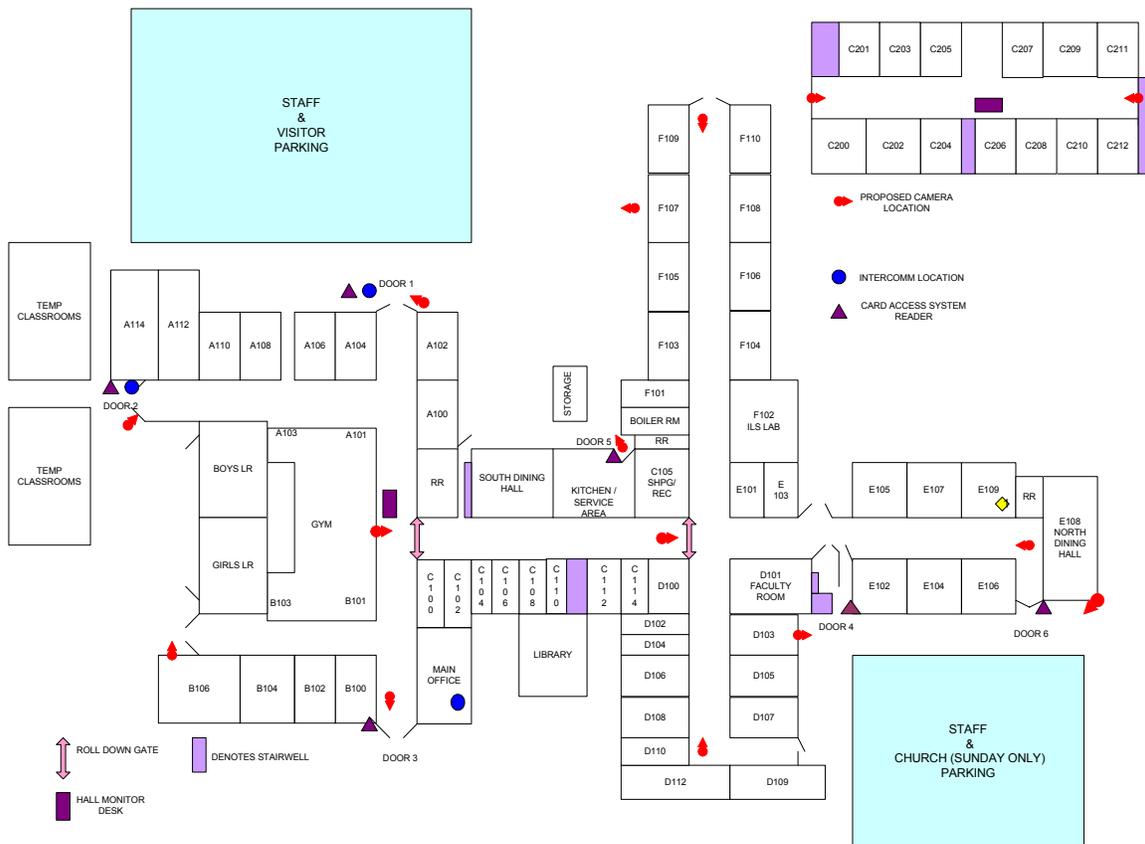
External camera (Pelco Model ISC300-CRV3A) located at the roofline at D103 to view door 4 and the sidewalk looking north.

Camera 15:

External camera (Pelco Model ISC300-CRV3A) at the roofline of the north dining hall looking southeast to view the parking lot.

Camera 16:

External camera (Pelco Model ISC300-CRV3A) at the roofline outside of door 6 to view the entrance area.



Southfield Lathrup High School

GENERAL

Furnish, upgrade and install a complete closed circuit television (CCTV) system as described herein for Southfield Lathrup High School with the latest off-the-shelf technology. This system will incorporate 28 new fixed interior cameras, leave in place and use 11 existing interior cameras, upgrade/replace 16 exterior existing fixed cameras, and leave in place and use 3 existing fixed exterior cameras. All coax and power cables to all cameras (new and existing) are to be new.

All head-in equipment is to be replaced. This will include but not be limited to: multiplexers, time-lapse recorders, DVR, monitors in all offices, power supplies for existing cameras, and miscellaneous mounting hardware.

All equipment, which will not be reused, is to be removed, cleaned, and packed to protect the old equipment from damage. A complete inventory of all old equipment will be provided to school administration. Old equipment will be returned to owner.

Interior cameras, both existing and new, are to have all cables (both power and coax) installed in metal conduit below ceiling level. No existing firebreaks are to be re-used. New firebreaks are to be installed and properly sealed for all cables. Examples and specifications are provided. All interior cables are to be supported by either "J" hooks or cable trays. NO CABLES are to be laid on ceiling tile or across plastered ceilings.

Exterior cameras will be replaced with dome type cameras that have a smoked dome and vari-focal lens. Each camera will have a new, weather resistant power supply capable of handling 100va with circuit protection. New mounts will be supplied, as well as new cables for each camera.

All existing cameras that will remain in service (11 @ interior and 3 @ exterior) are to be inspected, repaired and made operational as part of this bid. NO additional charges will be honored or paid to repair or replace any existing camera. Bidders are to inspect the operation of all existing cameras that will remain in service prior to submitting a final bid. Southfield Public Schools will not authorize any additional funds above the bid price to make any existing cameras operational after the award of the bid. Future expansion capabilities are an important part of this bid and all bidders must supply documentation on expansion capabilities in P/T/Z equipment requested. Southfield Public Schools will not purchase CCTV equipment, which has a high upgrade cost to move to P/T/Z equipment. (Running of data cable for 422, new mounts for domes, power supplies with higher output capacity, are some examples.)

- Furnish and install twenty eight (28) interior cameras with mounts, cables, and power supplies
- Upgrade sixteen exterior cameras and mounts, furnish new coax and power cables
- Furnish and install four (4) Digital Video Recorders
- Furnish and install four (4) Video Multiplexers, with sixteen inputs, color, duplex
- Furnish and install four (4) desktop PCs
- Furnish and install LAN with router, firewall and DSL
- Furnish and install four (4) 21" Color Monitors with ceiling mounts
- Furnish and install one (1) data cabinet
- Install new coax and power cable to eleven (11) existing interior cameras
- Install door alert radio system to four (4) exterior doors with video alarm capability
- Expansion capability: Ability to upgrade to P/T/Z domes without changing mounts, installing new cabling or replacing power supplies.
- Service after the sale: Manufacturer support for repair (24 hour turn around), local training facility at no cost, authorized dealer with loaner equipment, 24/7 engineering and technical support.
- Electrical Requirements: The successful bidder shall provide all 110-volt AC outlets required to operate the entire CCTV system. This will include, but not be limited to, interior and exterior cameras, CCTV computers on LAN, power supplies, equipment rack and cooling fans, and other accessory equipment. All bidders are to be knowledgeable in 110 volt AC installation, power consumption, and local codes. It is the responsibility of each bidder to handle all steps to increase the 110-volt AC capacity. Southfield Public Schools will not provide or pay an additional charge to install interior or exterior electrical outlets required to make the CCTV system operational.

EQUIPMENT SPECIFICATIONS

GENERAL

- All equipment and materials used shall be standard components, regularly manufactured, regularly utilized in the manufacturer's system.
- All systems and components shall have been thoroughly tested and proven in actual use.

- All systems and components shall be provided with the availability of a toll free (U.S. and Canada only) 24 hour, technical assistance program (TAP) from the manufacturer. The TAP shall allow for immediate technical assistance for either the dealer/installer or the end user at no charge.
- All systems and components shall be provided with a one-day turn around, repair express and 24 hour parts replacement. The repair and parts express shall be guaranteed by the manufacturer on warranty and non-warranty items.
- **NEW INTERIOR FIXED CAMERAS: QUANTITY OF 28**
All of these cameras will be new and installed at locations that have presently have no cameras, coax, mounts or power cables. The cameras proposed must meet the minimum standards listed **or be the approved equal** of a Pelco Model ICS090B-CRV4A.

INDOOR FIXED MOUNT 3" MINI DOME SYSTEM

- The indoor integrated CCTV camera and enclosure shall consist of an injection molded impact resistant, surface-mount/recessed mount dome enclosure with integrated fixed camera and lens. The integrated camera and lens shall consist of a camera and lens module that is packaged separately for shipment and which shall allow the installation of the enclosure to precede installation of the camera and lens.
- The tamper/impact resistant dome enclosure shall meet or exceed the following design and performance specifications:
 - The enclosure shall be easy to install, requiring only standard tools.
 - The enclosure shall have the following external dimensions: overall height shall not exceed 3.75 inches, and enclosure diameter shall not exceed 5.30 inches.
 - The dome shall consist of 3.75-inch diameter, polycarbonate high security bubble that has high optical clarity and nominal distortion at all camera angles.
 - The dome shall be available in clear or smoked versions. The smoked version shall have a maximum light loss not greater than 1.5 f-stops.
 - The enclosure shall be class B, UL listed and FCC, class B certifications.
 - The enclosure shall be capable of mounting to a standard 4S or double-gang electrical box using the adapter plate (provided), or to the switch plate or lighting hole pattern that is standard on most double-gang mud rings.
- The integrated camera system shall be capable of accepting either 12 VDC (+/-10%) or 24 VAC (+/-10%) input power. Inside the enclosure shall be a connector board that has terminals for connecting 24 VAC or 12 VDC power.
- A male pigtail BNC connector for video shall be provided for connecting video. The enclosure, when installed, shall have no exposed cables.
- The integrated camera and lens assembly shall consist of a charge coupled device (CCD) camera with fixed focal length or vari-focal lens that is mounted as an easily installable/removable module.
- The CCD camera shall consist of a 1/4-inch format interline transfer imager meeting NTSC (EIA) or PAL (CCIR) signal format specifications.
- The cameras shall be available in high-resolution color capable of 480 lines of horizontal resolution.
- The high-resolution color camera shall be available with a 4mm to 9mm vari-focal length lens with on/off DIP switch for auto iris capability. This camera shall utilize a 1/4-inch CCD imager.
- All cameras, including the 1/4-inch CCD with vari-focal lens, shall be capable of electronic light control, commonly referred to as electronic shutter.
- All color cameras shall be 2:1 interlace and capable of AC line lock that is adjustable via potentiometer.
- A jumper shall be provided on the power supply board for configuring to either 12 VDC or 24 VAC power.
- All cameras shall be protected from incorrect placement of the 12VDC/24VAC jumper.
- The camera module shall meet or exceed the following design and performance specifications:
 - The camera module shall have two (2) spring steel, compressible arms, which create an interference fit that holds the module in place.
 - During installation and camera adjustment the module design shall allow adjustment of the camera on three axes to allow maximum flexibility during scene adjustment.
 - The three axes shall be pan, tilt, and rotation.
 - The camera and lens, when installed on a ceiling or horizontal surface, shall be capable of 360 degrees of pan and no less than 70 degrees of tilt. When field of view is factored, apparent tilt shall be no less than 90 degrees.
 - The camera and lens, when installed on a wall or vertical surface, shall be capable of 180 degrees of pan and no less than 140 degrees of tilt.
 - The camera module shall consist of the camera, lens, and 24 VAC power supply board.
 - The camera module shall be easy to install by being provided with a quick connect/disconnect connector.

- The removable camera module shall allow unrestricted access to the inside of the enclosure during installation of the enclosure.
- The contractor shall provide the indoor integrated CCTV camera and surface-mount dome enclosure with a manufacturer's warranty covering repair or replacement of defective parts for a minimum period of **three years** from the date of shipment.

• **POWER SUPPLY FOR NEW INTERIOR CAMERAS: QUANTITY OF 2**

There are 2 interior 24-volt AC power supplies required to power the new interior cameras. Each power supply is to meet the minimum specifications as the Pelco Model MCS 16-20SB **or approved equal**.

The central power supply shall meet or exceed the following specifications.

1. Multiple camera 24 VAC power supply unit and cabinet
2. 20-ampere capacity
3. Outputs for 16 cameras
4. Circuit breaker protection; resettable breakers included
5. 120 VAC input
6. 24 VAC output or 28 VAC output for longer wire runs
7. UL and CE approval
8. AC power indicator with power on/off switch
9. Compatible with supplied cameras
10. Cabinet enclosure suitable for wall mounting

The power supplies shall be provided with a manufacturer's warranty covering repair or replacement of defective parts for a minimum period of **three years** from the date of system commissioning.

INSTALLATION STANDARDS

All interior cables shall have an outer jacket that is plenum rated and meets or exceeds all local, state and national building and fire codes. Further, all interior cables shall be suspended from the ceiling every eight feet or closer using approved methods (i.e. "J" hooks or cable trays). Any penetration of firebreak walls shall be done using 1 1/2" EMT, with 1 1/2" EMT coupler and insulating bushing on each end. The conduit will be caulked in place using fire barrier sealant rated for 4 hours or better. Any unused capacity of the conduit will be fill with moldable fire stop putty at both ends.

UPGRADE EXTERIOR CAMERAS: QUANTITY OF 16

There are 16 existing exterior cameras that will be removed and replaced with high-resolution color dome cameras (fixed position, not P/T/Z). The domes will meet the minimum standards of the Pelco CC3751H-2 **or approved equal**.

Exterior Cameras

The camera shall be a high resolution, low light, color camera. The camera shall meet or exceed the following design and performance specifications:

- The camera shall be 1/3 inch high resolution digital color CCD camera, 480 TVL, NTSC format
- Imaging device shall be 1/3" interline transfer CCD
- Picture elements shall be 768 (H) x 494 (V)
- Sensing area shall be 6mm diagonal
- Scanning System shall be 525 lines, 2:1 interlace
- Synchronization System shall be .AC line lock/internal
- Horizontal Resolution shall be 480 TV lines
- Iris control shall be electronic/passive
- Minimum illumination shall be 0.01 lux, f1.2, 40 IRE, AGC on, 75% reflectance
- Signal to noise ratio shall be 50 db
- Gain control shall be automatic
- Vertical phase shall be adjustable 0° to ± 170°
- Backlight compensation shall be selectable by dip switch setting
- Signal processing shall be DSP
- Auto iris lens type shall be DC/video control
- Video Output shall be 1 Vp-p, 75 ohms
- Electronic shutter

- Control range shall be 1/60 to 1/100,000 second
- Power requirements shall be 24 VAC with an operating range of 18VAC to 30VAC
- Operating temperature shall be 14° F to 122° F
- Camera shall be Pelco Model CC3751H-2 series or approved equal.

VARI-FOCAL LENS: QUANTITY OF 16

Each lens will be a vari-focal, auto iris, DC drive with 5.5 to 82.5 mm focal length and will meet the minimum specification of the Pelco series 13VD **or approved equal**.

Vari-Focal, Auto Iris, DC Drive Lens

- The lens shall be a 1/3" format, variable focal length, auto iris lens, along with any accessories, which may be required for a complete lens system.
- The lens shall meet or exceed the following design and performance specifications:
- The lens shall be a "CS" mount.
- The lens shall be used with 1/3" or smaller format cameras.
- The lens shall provide DC drive auto iris, manual zoom and manual focus adjustments.
- The lens shall provide high-resolution power in a compact body.
- The lens shall automatically compensate for changing light conditions.
- The lens shall be 5.5 mm to 82.5 mm.
- The lens shall have a minimum object distance of 0.2m.
- The lens shall have a filter size of 46PO.75.
- The lens shall weigh a maximum of 0.20 kg.
- The lens shall measure a maximum of 1.66"D x 2.85"L and 1.95"H (motor).
- The vari-focal length lens shall be provided with a manufacturer's warranty covering repair or replacement of defective parts for a minimum period of **two years** from the date of shipment.
- The vari-focal length lens shall be the Pelco 13VD Series or approved equal.

EXTERIOR FIXED 8" DOME: QUANTITY OF 16

Each exterior camera shall consist of a low profile pendant mount discreet 8" dome with a fixed camera mount. The dome shall meet or exceed the minimum specifications of the Pelco DF8-PG-EO **or approved equal**.

- The lower dome shall be a maximum of 8.50" in diameter and extend to maximum of 4.50" below the enclosure.
- The dome shall be capable of mounting on any 1.5"NPT female pipe threads.
- The lower dome shall be of acrylic material, optically clear with minimal distortion in any portion of the dome.
- The lower dome shall be available in black opaque with smoked window and A maximum of 1 f-stop light loss, smoked bronze with a maximum of 1 f-stop light loss and opaque white with a clear viewing window with virtually 0 f-stop light loss. The fixed mount dome shall feature a fixed camera mount capable of 360°horizontal positioning of the camera.
- The fixed mount dome shall accommodate camera/lens packages of 7.50"L x 2.50"H x 2.10"W when viewing horizontally, 8.00"L when viewing down at 15° and 9.00"L when viewing down at 30°.
- The dome shall be constructed of type 5052H32 aluminum.
- The faceplate shall be constructed of plastic.
- The dome shall weigh a maximum of 8.5 lbs.
- Finish shall be polyester powder coat.
- Operating temperature shall be -60° F to +122° F continuous
- Operating temperature preventing icing, -50° F to 120° F continuous
- Operating temperature to de-ice in 3 hours, -40° F to 120° F
- The outdoor fixed mount 8" dome shall be provided with a manufacturer's warranty covering repair or replacement of defective parts for a period of one year from the date of installation.
- The outdoor fixed mount 8" dome shall be the Pelco DF8CL-PG series or approved equal.

COAX CABLE: Length to be determined by bidder

All coax cables must be home runs from each camera to the head-in equipment. No splices or repairs are allowed in any of the cables. The cable will meet the minimum specifications of Belden Model: 543945 **or approved equal**.

POWER CABLE: Length to be determined by bidder

All power cables must be home runs from each camera to the head-in equipment. No splices or repairs are allowed in any of the cables. The cable will meet the minimum specifications of Belden Model: 2A-1402 or approved equal.

EXTERIOR CAMERA MOUNT: QUANTITY OF 16

The exterior camera mount will be of a parapet style which will allow the camera to be serviced by a technician while standing on the roof and will not require any holes in the new roof installed at Southfield Lathrup High School. Each mount shall meet the minimum specifications of the Pelco PP350 mount or approved equal.

- A. The parapet mount shall consist of a medium duty mount designed to accommodate a Spectra Series outdoor pendant dome to the inside or outside of a rooftop parapet surface along with any accessories, which may be required for a complete parapet mount.
- B. The parapet mount shall meet or exceed the following design and performance specifications:
 - The parapet mount shall measure 35.27”H with a right angle section extending 25.42” out from the mounting surface positioning the vertical centerline of the dome at 20.42” out from the inside surface of the building parapet and shall include an 11.00”W x 14.00”H mounting plate, pre-drilled with ten .370” holes for attaching to the mounting surface.
 - The mount shall be designed to mount to any suitable vertical surface of at least 12” minimum parapet height.
 - The mount shall attach to the mounting surface via a minimum of six fasteners of suitable size (3/8-16 recommended) for the mounting surface.
 - The mount shall be capable of mounting any small pendant dome, which uses 1-1/2-inch NPT pipe for vertical surface mounting.
 - The mount shall provide unlimited 360° rotation in the horizontal plane for ease and safety of installation and service of the equipment on the rooftop.
 - The mount shall be designed to support up to 45 lbs.
 - The mount shall be constructed of 6061-T6 aluminum and finished in a gray polyester powder coat.
 - The mount shall weigh 10 lbs.
- C. The parapet mount shall be provided with a manufacturer’s warranty covering repair or replacement of defective parts for a minimum period of **one year** from the date of shipment.

EXTERIOR POWER SUPPLY: QUANTITY OF 16

Each camera will have an independent power supply which will provide a minimum of 24 volts to the camera after setting and voltage drop across the power cable under full load (heater, fans, and motors operational) and meet the minimum standards of the Pelco Model: WCS1-4

3. DIGITAL VIDEO RECORDERS: QUANTITY OF 4

The digital video recorder (DVR) shall provide a high-quality recorder capable of storage and playback of images from 1 to 16 camera inputs at a simultaneous refreshing recording rate of up to 480 images per second (NTSC) at CIF resolution with a CD-RW as standard equipment. Refer to paragraph B.8 for total frame rates at 2 CIF and 4 CIF resolutions. The DVR shall possess a watchdog system, triplex operation, Windows® 2000 operating system with Service Pack 4 with the latest security updates from Microsoft, watermarking of each frame, inputs for external alarms, video motion detection, and scheduled event recording. Remote software shall be provided for operation via PC, web, and Pocket PC handheld devices.

A 15” or larger, flat panel LCD display, keyboard and mouse shall be provided for setup and display at the DVR with out moving cables between units.

The DVR shall meet or exceed the following design and performance specifications:

PROCESSOR:

Processing Unit:

- Pentium® 4, 2.8 GHz processor with 256 MB of RAM

Recording Modes:

- Continuous, motion detection, alarm activation, or scheduled recording

Storage:

- Hard drive with 80, 250, 500, 750, or 1,000 GB of storage

Operating Software:

Windows 2000, Service Pack 4

Signal Format:

- NTSC/PAL

Resolution:

NTSC 320 x 240, 640 x 240, 640 x 480, 720 x 240, or 720 x 480 pixels, depending on model

PAL 352 x 288, 704 x 288, 704 x 576, 720 x 288, or 720 x 576 pixels, depending on model

Compression:

Pelco proprietary

Frame Rate:

	NTSC	PAL
CIF	480 ips	400 ips
2CIF	112 ips	96 ips
4CIF	80 ips	64 ips

Functions:

- Operate as a recorder and a full-duplex multiplexer

PTZ Control:

- Pan, tilt, and zoom functions via RS-422 communications (D, P, and Coaxitron® protocols)

Viewing/Recording:

- Configurations of full screen, 4, 9, 12, or 16 cameras, or custom-designed display views

Full-Triplex Operation:

- Simultaneous playback and live viewing while recording live images

Programmable Schedules:

- 24 individual schedules

Program Modes:

- Motion event, alarm input, or continuous recording

Hardware Watchdog System:

- A hardware device to monitor the system clock for Windows lockup; upon lockup of the system the recorder shall automatically reboot without losing any of the programmed settings

Password Protection:

- Four user levels of protection for setup functions, operation, and system exiting

Motion Detection:

- Built-in motion detection for each camera to start recording or to increase the recording rate of the system

Motion Areas:

- Selectable detection area and sensitivity for each camera

Languages:

- English, Spanish, German, French, Italian, and Portuguese

Alarm/Motion Activation:

- Alarm input will start the unit recording, or if already recording, increase the recording rate and image quality

Pre-Alarm or Pre-Motion Recording:

- Record images for up to 60 seconds before the alarm sensor has been activated

Bandwidth Throttling:

- Network throttling of transmitted video

Alarm History Log:

- Available through a query

Alarm Outputs:

- Sixteen dry contact alarm outputs to activate external devices

Motion Activation:

- When a unit is in scheduled time recording and a camera detects motion or an alarm is activated, the system shall begin recording the event

Remote Control:

- Full remote control operation of pan, tilt, and zoom functions via TCP/IP protocol and RS-422 interface

LAN/WAN Connection:

- Software and hardware provided for viewing and controlling DVR over the network

Video Quality:

- High-quality video recording of at least VHS grade compared to the original video; supports NTSC or PAL video

Color Palettes:

- Minimum of 16 million color palettes

Gray Scale:

256 shades

Backup:

- A backup management system is to be provided to back up data to external devices (CD or other storage devices) without interrupting hard disk recording

Hard Disk Drives:

- From 80 GB up to 1TB

Programming:

- On-screen programming and operation through a PC keyboard or PS/2 mouse.

Digital Zoom:

- Digital zoom of the image on the screen during playback modes

Authentication:

- Software provided for image verification of each image recorded

MECHANICAL:

Mounting:

Capable of being mounted in an EIA-standard 19-inch rack

Connectors:

- Sixteen BNC video inputs plus sixteen looping video outputs with automatic termination
- Two 9-pin, D-type connectors for COM 1 and COM 2 ports (disabled)
- Two 6-pin, mini-DIN connectors for a PS/2 mouse and keyboard
- One 15-pin, D-type port for a PC monitor connection
- One 25-pin D-type port for Printer connection
- One S-video jack for analog monitor output (disabled)
- Two multiplexed analog video outputs (optional)
- One RJ-45 connector for network connection
- Four RJ-45 ports for RS485/RS422 support
- Depending on model, eight or sixteen push-in connectors for alarm inputs and eight or sixteen push-in connectors for relay outputs
- Six high-speed USB 2.0 ports

Dimensions:

- Desk Mount
7.0 (H) x 17 (W) x 19.9 (D) inches
(17.78 x 43.18 x 50.55 cm)
- Rack Mount
7.0 (H) x 19.0 (W) x 22.0 (D) inches
(17.78 x 48.26 x 55.88 cm)

Operating Temperature:

- 50°F to 95°F (10° to 35°C)

Relative Humidity:

- Maximum 80% non-condensing

Optical Drive:

- CD-RW

ELECTRICAL:

- Input Voltage 100-240 VAC, 50/60Hz, auto-ranging

MODEL:

- DX8016-1000 Sixteen camera inputs, 1 TB storage, CD-RW, 512 MB Ram or approved equal

4. VIDEO MULTIPLEXER: QUANTITY OF 4

The video multiplexer shall consist of a time-base corrected multi-camera recording and playback device, multi-camera display generator, activity detector, switcher, Coaxitron controller, all combined into a single self-contained unit.

The video multiplexer shall meet or exceed the following design and performance specifications:

- The video multiplexer shall be capable of recording up to sixteen color or black and white video inputs on a single VCR.
- The multiplexer shall have full duplex operation to allow video recording while viewing live, full, multi-screen or playback video.
- The video multiplexer shall have an automatic speed-tracking mode that allows the VCR's recording speed to automatically adjust and control the multiplexers record speed via the VCR's head switching pulse.
- The video multiplexer shall have three monitor outputs, one for full and/or multi-camera viewing in live or playback modes, one for full screen viewing of live cameras, and one for automatic sequencing of full screen live cameras. All three monitors shall be capable of automatically displaying cameras in alarm and/or cameras that have detected activity.
- The video multiplexer shall utilize multi-element horizontal and vertical finite impulse response to resize inputs for multi-camera displays.
- The multiplexer shall have 26 megabytes of display image memory.
- The video multiplexer shall have a digital image of 768 (H) x 512 (V) pixels full screen.
- The video multiplexer shall allow any input to be programmed into any display location: (PIP, quad (2x2), nine camera (3x3), and sixteen camera (4x4).
- The video multiplexer shall allow sequencing of at least four different Quad (4x4) displays and at least two different nine (3x3) camera displays.
- The video inputs shall be BNC connectors that are individually programmable as looping or 75 ohm terminating.
- The video multiplexer shall have 16 alarm inputs. Each alarm input shall be individually programmable for use with a normally open or normally closed device.
- The video multiplexer shall have a Form C relay output. The relay shall be programmable to activate as a result of alarm or activity detection.
- The video multiplexer shall have 2 data ports; data in, and data out. The ports shall be RS-485 at 9600 baud. The data ports shall support a remote keyboard and up to 16 multiplexers in a daisy chain configuration.
- The video multiplexer shall have a programmable 12-character title per camera as well as time/date with white characters surrounded by a black border.
- The time/date and camera title displays must be individually selectable on or off in both live and playback modes.
- The video multiplexer shall be capable of easy, on-screen programming.
- The video multiplexer picture-in-picture (PIP) display shall be programmable for size and position.
- The video multiplexer shall communicate with receiver drivers via Coaxitron format protocols. It shall include the ability to control both fixed and variable speed pan/tilt and dome devices.
- The video multiplexer shall have an S-VHS monitor output.
- The video multiplexer shall have an S-VHS input and output for interfacing to an S-VHS format VCR.
- The video multiplexer shall have an input voltage of 120 VAC, 50/60 Hz and have an operating voltage tolerance of +10 % (132 VAC) and -30 % (84 VAC).
- The video multiplexer shall consume a maximum of 25 watts.
- The video multiplexer shall operate in a temperature range of 32 degrees to 122 degrees Fahrenheit.
- The video multiplexer shall be RS-170, NTSC compatible.
- The video multiplexer shall measure 17.2" W x 1.75" H x 12.2" D
- The video multiplexer shall be factory configured for desktop use and include attachable rack ears for EIA rack mounting.

The video multiplexer shall be provided with a manufacturer's warranty covering repair or replacement of defective parts for a minimum period of **three years** from the date of shipment from the factory.

The video multiplexer shall be the Pelco MX4016CD or approved equal.

5. DESK TOP WORK STATION AND FLAT SCREEN MONITOR: QUANTITY OF 4

District will provide necessary work stations and monitors

6. LAN

The LAN is to be wired in four (4) locations and shall consist of CAT5e, plenum rated cable, one (1) 10/100 hub with a minimum of 8 ports, and one (1) router with firewall software to interface with the DSL line to be provided.

7. HIGH RESOLUTION, 21-INCH COLOR MONITORS and CEILING MOUNTS: QUANTITY 4

21-INCH COLOR MONITOR

The 21-inch color monitor shall provide a high resolution picture; high quality; 100% steel housing; front panel controls; built-in speaker; connections for video and audio input/output, including separate Y-C connectors for S-VHS input; and automatic color switching system for NTSC/PAL.

The color monitor shall meet or exceed the following specifications:

- Diagonal Picture 21 inches (53.34 cm)
- Deflection 90°
- Standards NTSC/PAL
- Integral Implosion Protection Yes
- TV Lines of Resolution Minimum of 420 horizontal TV lines
- Degaussing Circuitry Automatic
- Warm up Instantaneous
- Input Power Range 110-240 VAC, 50/60 Hz
- Wattage consumption Maximum of 70 watts
- Speaker 1.0 W (-3 dBV), built-in
- Comb Filter Digital
- Color Switching Automatic between NTSC/ PAL formats
- Composite video voltage 1.0 V p-p
- Sync Range 3.579549 MHz ± 200 Hz 4.433619 MHz ± 200 Hz at room temperature
- Synchronization Internally derived
- Measurements Maximum of 17.2 (H) x 18.9 (W) x 18.9 (D) inches (43.7 x 48.0 x 48.0 cm)
- Weight Maximum 52 lb (23.6 kg)
- Front Panel Controls Tint, color, brightness, contrast, volume, and power on/off
- Recessed Service Controls Subtint, subcolor, subbrightness and subcontrast
- Video Inputs 1 BNC input, a 75-ohm or Hi-Z sliding switch, 1 DIN S-VHS
- Audio Inputs 1 RCA
- Output Connectors 1 BNC video output, 1 RCA audio output
- Power Cords 2, grounded, one for 120 VAC and the other a European style for 230 VAC
- Cabinet Construction Steel cabinet with plastic faceplate
- Operating Temperature Range 32° F to 106° F (0° to 41°C)
- Operating Humidity Range 0% to 90% relative, non-condensing
- Certifications CE, class B; ETL; ETLIC; FDA; EMI compliance; FCC, Class A
- Mounting Console-mounted within equipment console bay

The color monitor shall be provided with a manufacturer's warranty covering repair or replacement of defective parts for a minimum period of **one year** from the date of system commissioning.

The color monitor shall be the Pelco PMC21A or approved equal with the Pelco MR5000L monitor mount or equal.

MONITOR MOUNT

The monitor mount shall consist of a heavy duty, sturdy platform designed to mount a 19" through 31" CCTV monitor to a wall or ceiling.

The monitor mount shall meet or exceed the following design and performance specifications:

- The monitor support pan platform shall measure 14.23"D and shall be adjustable from 19.476" to 31.476" W and from 19.00" to 27.75" H.
- The mount shall feature a universal mounting adapting to most 19" to 31" CCTV monitors.
- The mount shall adjust horizontally and vertically to allow correct positioning of the monitor.
- The mount shall allow for 360° pan adjustment.
- The mount shall support up to 150 pounds when securely attached to the mounting surface.
- The mount shall be supplied with an 8-inch section of 1-1/2" threaded pipe to attach to the mounting adapter.
- The mount shall be fastened to its mounting surface, wall or ceiling via the correct adapter for the mounting application.
- The mount shall accommodate monitor mounting via multiple slotted holes in the monitor support pan and four mounting screws, user supplied.
- The mount shall utilize an 8-32 Phillips screw for locking the 8" x 1 1/2" pipe to the mount.
- The mount shall be constructed of steel and finished in a black polyester powder coat.
- The mount supply shall weigh 27.40 lbs.
- The mount shall be provided with a manufacturer's warranty covering repair or replacement of defective parts for a minimum period of **one year** from the date of shipment.
- The mount shall be the Pelco MR4050 and the optional adapters shall be the Pelco MRCA ceiling adapter or the Pelco MRWA wall adapter, or approved equal.

8. DATA CABINET: QUANTITY OF 1

The Data Cabinet shall meet these minimum requirements:

- Construction: Steel
- Removable steel side panels
- Vented steel rear locking door
- Solid front steel locking door
- Top panel with 10" 110VAC Quiet Fan
- Minimum usable depth of 29"
- Minimum height 84" – 44 RU
- Adjustable rear rails
- Monitor/ Keyboard shelf
- Power strip with minimum of 10 outlets
- 8 lace bars for attaching cables
- Middle Atlantics Products Model MRK-4431 or approved equal

9. DOOR ALERT RADIO SYSTEM: QUANTITY OF 4

Door alert radio system will attach to four doors and alert security/school personnel on their UHF radios when a door is open. System must broadcast a distinct message for each open door and continue to broadcast that message until the door is closed.

The minimum requirements are:

- 5 WATTS Transmit Power
- Antenna Connector: BNC, 50 ohm
- Switch inputs: 4

The door alert system must provide a voice message over the UHF handheld radios used by security and administration whenever one of four armed doors has been opened. The message is to repeat at time intervals (programmable) and to automatically provide a video picture of the door in question on the security monitor and all computers in the video LAN. The radio door alerts must be able of being turned off remotely by security when there is scheduled activity at any of the doors. In addition the radio transmitters must have battery back up to allow for continual voice messages during power outages or emergencies. The UHF repeater is to also have a battery back up system installed to allow for 6 hours or operation on a 40-30-30 duty cycle. In this way, the door alert system will provide security with voice alerts when the doors are opened during electrical outages.

ASBESTOS: Southfield Lathrup High School and Birney Middle School has asbestos at many locations in the buildings. Should asbestos be located, school maintenance is to be notified prior to any action being taken. Should firebreaks need to penetrate any contained asbestos, Southfield Public Schools will provide the abatement service. All installation personnel are to be trained in identifying asbestos and avoid disturbing any areas that contain

asbestos. Should asbestos be disturbed, it will be the responsibility of the installation company/service to cover all abatement cost involved.

BIDDER QUALIFICATIONS: Each bidder must meet all of the following minimum standards:

- Authorized sales and service company for each and every product bid. No bidder may offer for sale any product they are not authorized and approved by the manufacturer to sell and service.
- Each bidder must have an open and active parts account with the manufacturer on all lines of equipment proposed. **SERVICE AFTER THE SALE IS THE HIGHEST PRIORITY AND A BIDDER MAY NOT OFFER A PRODUCT THAT THEY DO NOT PRESENTLY HAVE AN EXCELLENT TRACK RECORD OF PROVIDING SERVICE FOR.**
- Been in business for a period of 5 years providing sales and service on all equipment included in this bid.
- Financial stability. Bidder must provide proof of ability to handle this project with lines of credit from manufacturer that will allow shipment of product on credit until project is signed for and accepted. No payment will be provided for any equipment installed until the final acceptance has been signed.
- Each bidder must be local, bidders outside of the tri-country area will not be considered as a viable service facility. All bidders must state average response time for normal and emergency calls.
- Loaner equipment history. Bidders are required to provide loaner equipment to keep this system operational during and after the warranty period. Each bidder must provide proof of a history where they have provided loaner equipment to customers on prior sales. (Loaner equipment MUST have included DVR, multiplexers, computers, P/T/Z units, matrix switchers, monitors, time-lapse recorders, power supplies, and fixed cameras).
- Established in providing products and repair services to a minimum of 5 school districts in the tri-country area. Have a track record of providing these repair services for a minimum of 5 years in the Detroit area.
- In good financial standing with manufacturers of all products proposed in this bid.
- Established service shop that includes:
 - Test equipment – not just a voltmeter and test pattern generator
 - Soldering station to remove surface mounted devices
 - RF voltmeters to check and analyze gain in stages
 - Service benches with full time technicians to repair at component level
 - Oscilloscopes -Dual trace, 50Mhz or higher
 - Spectrum analyzers
 - Fiber Optic Testers
 - LAN to test DVR for local access
 - Full time road technicians that service (not install) CCTV equipment
 - Service vehicles equipped with necessary equipment to test while on site.
- History of installing and providing service on large CCTV, LAN, RF and audio systems in the Detroit area.

Each bidder must list all areas of the qualifications they are not able to meet and provide an explanation where the qualification was not met.

