
KETS Building and Technology Wiring Project Form Version 5.0

2022 Instruction Guide



Created: April 20, 2022
Last Reviewed: April 20, 2022
Last Updated: April 20, 2022

Prepared By: Paul Shoemaker
Kentucky Department of Education
Office of Education Technology
Division of School Technology Planning and Project Management
300 Sower Blvd.
Frankfort, KY 40601
(502) 564-2020

This instructional guide will review each page and section of the KETS Building and Wiring Project Checklist Form. The guide is designed to explain the form, how the sections should be completed and how the form can be transferred for signatures and approvals. Additional information regarding resources (i.e. Kentucky Building Codes, IEEE references) will be included in the appendix with current links to those resources.

Purpose: The KETS Building and Technology Wiring Project Form (BWP) collects information for the approval process for technology and low voltage wiring used in K-12 facilities/campuses. The BWP is managed and reviewed by the Office of Education Technology (OET) as part of their initiatives to ensure best technology practices are being followed in regard to foundational technology components in K-12 construction, renovation and expansion projects. This form must be completed, approved by OET and filed with KDE Facilities Management prior to implementation of the technology wiring or components proposed within the form. Items listed as a “Required Field” must be filled out to complete the form. A zero (0) or N/A (Not Applicable) may be used in required fields as they apply.

First Step: Download the “Building Technology Wiring Project Form Version 5” PDF file from the KDE website. Rename the file using the following format:

District Name - Project Name - BWP mm/dd/yyyy.

Example: Adair Co - Adair Middle School - BWP 02-15-2022

Make sure to rename the file before filling it out. The new name will play an important role in the email distribution of the finished form at the end of this process.

After renaming the file, open the file in **Adobe Acrobat or Adobe Acrobat Reader**. The signature functionality will not operate properly if the file is opened in a browser or other application. Once opened in Acrobat or Acrobat Reader, fill out the form as instructed below.

The Building and Technology Wiring Project Form:

General Information

This section of the form collects the following information:

Date Requested: The date the BWP form is filled out. (Required Field)

Building Project Number (BG-1): The BG-1 project number that is assigned to this project.

School or Project Name: The name of the School, Campus or structure addressed by this project. (Required Field)

District Name: The name of the school district the project is initiated in. (Required Field)

School Size (ADA): The size of the school, based on the Average Daily Attendance (ADA) or number of students served by that facility listed in the project. (Required Field)

Number of Rooms in the Building: The total number of rooms in the facility, listed in the project. (Required Field)

Types of Projects

Check one of the radio buttons that best applies to the project. Only one can be selected.
(Required Field)

New Construction: This describes a completely new structure, with no pre-existing building or structure in place.

No Changes (Use Existing): This describes a project where no technology wiring is required or existing wiring will be used with no new wiring introduced.

Renovation: This describes a project where reconstruction or alteration of existing infrastructure, building or campus structure takes place.

Update Existing: This describes a project updating the existing infrastructure, not requiring a “forklift” upgrade or reconstruction of infrastructure. This usually covers minor changes.

Additional Building (Permanent or Mobil): This describes a project addressing the addition of a new building, mobile structure or temporary structure to an existing campus or facility.

Replacement: This describes a project addressing the complete replacement of existing infrastructure (wiring).

Additional Wiring: This describes a project addressing minor additions to existing LAN/WAN/ Campus network, expanding on existing infrastructure, usually within existing facilities.

Funding Resources

Using Local Funds Only? Yes/No: Does the project rely only on Local funding sources?
(Required Field)

If NO, What Amount of EDTECH Funds Requested: List the estimated amount of KETS/ EDTECH funds requested in this project.

Estimated Cost for Technology Wiring for This Project: List the estimated cost for all wiring and wiring related costs for this project. (Required Field)

Does this Project reduce Unmet Need? Yes/No: Does this project address reducing the Unmet Need for this district? (Required Field)

Are KETS Contracts being used for Procurement? Yes/No: Select if KETS Contracts are used or not. (Required Field)

If NO, please include explanation: List why KETS contract options were not used.

List items that do NOT meet full KETS Standards: List any items that do not meet KETS Standards. Links to the KETS Standards are listed in the Appendix at the end of this guide.

Classroom Technology Wiring

Note: All Ethernet Cabling must be Category 6 or better for all Data, Voice or Video connections.

Student Ethernet Drops

Number of Student Ethernet Data Drops: List the number of Student Ethernet Data drops per classroom. (Required Field)

Teacher Ethernet Drops

Number of Teacher Ethernet Data Drops: List the number of Teacher Ethernet Data Drops per classroom (Required Field)

Number of Teacher Ethernet Voice Drops: List the number of Teacher Ethernet Voice Drops per classroom (Required Field)

Classroom Resource Ethernet/Low Voltage Wiring Drops

Note: All Ethernet Cabling must be Category 6 or better for all Data, Voice or Video connections.

Number of Wireless Access Point (WAPs) Ethernet Drops: List the number of Ethernet drops used for WAPs per classroom. (Required Field)

Number of Video Ethernet Drops: List the number of Ethernet video drops per classroom. (Required Field)

Number of Video R6/R11 Cable Drops: List the number of R6/R11 video cable drops per classroom. (Required Field)

Number of Projector Ethernet Drops: List the number of Ethernet projector drops per classroom. (Required Field)

Number of HDMI Cable Drops: List the number of HDMI cable drops per classroom. (Required Field)

Number of Ethernet Printer Drops: List the number of Ethernet printer drops per classroom. (Required Field)

Number of Intercom/Speaker Drops: List the number of Intercom/Speaker wiring drops per classroom. (Required Field)

Number of Interactive Video Ethernet Drops: List the number of Interactive Video Ethernet drops per classroom. (Required Field)

School Facility Technology Wiring (Outside of Classrooms)

Note: *All Ethernet Cabling must be Category 6 or better for all Data, Voice or Video connections.*

Number of Wireless Access Point (WAPs) Ethernet Drops: List the number of Ethernet drops used for WAPs per area listed (Hallways, Cafeteria, Conference Rooms, Gymnasium, Offices, Bus Garage, Athletic Fields, Locker Rooms, Press Box, Residential Facilities and Other). (Required Fields)

Number of Data Drops (not WAPs): List the number of Ethernet drops used for WAPs per area listed (Hallways, Cafeteria, Conference Rooms, Gymnasium, Offices, Bus Garage, Athletic Fields, Locker Rooms, Press Box, Residential Facilities, HVAC Systems and Other). (Required Fields)

Number of Security Camera Drops

Security Camera Ethernet Drops: List the number of Ethernet drops for security cameras. (Required Field)

Security Camera R6/R11 Drops: List the number of R6/R11 cable drops for security cameras. (Required Field)

Number of Wireless Camera Installations: List the number of wireless security cameras being installed for this project. (Required Field)

Data Center and Wiring Closets

Data Center Ethernet Drops

Data Center Ethernet Drops: List the number of Ethernet data drops in the Data Center. (Required Field)

Data Center Voice Drops: List the number of Ethernet voice drops in the Data Center. (Required Filed)

Number of Data Center Ethernet Wireless Access Point (WAPs) Drops: List the number of Ethernet drops for WAPs in the Data Center. (Required Field)

Wiring Closets

Number of Campus Distribution Frames (CDF): List the number of Campus wide distribution frames/closets. (Required Field)

Number of Main Distribution Frames (MDF): List the number of Main Distribution Frames/Closets. (Required Field)

Number of Intermediate Distribution Frames (IDF): List the number of Intermediate Distribution Frames/Closets. (Required Filed)

Historical Information (Previous Design and Wiring Infrastructure)

Note: Include all structures and facilities referenced in this project, including any school campus facilities connected to, or effected by this project.

Existing Technology Wiring

Existing Data and Voice Cable Types (Check All That Apply)

Copper Base: Category 3, Category 5 and 5e, Category 6 and 6A

Fiber Base Multi-Mode: Fiber 62.5/125 OM1, Fiber 50.0/125 OM2, Fiber 50.0/125 OM3

Fiber Base Single Mode: Fiber 9/125 OS2

Existing Distribution Infrastructure (Check All That Apply):

Air Ducts/Air Chases, Conduit (Plastic/PVC), Conduit (Metal), O-Rings, J-Hooks, and Ladder Racks

Are Diagrams Available for the Following (Check All That Apply):

Distribution Systems, Voice Systems/Intercoms, Mechanical Systems, Security Systems, Campus Wiring Topology, Data Wiring (Copper), Data Wiring (Fiber), Video Systems, and Single Building Wiring Topology.

Technology Wiring Construction Checklist

It is expected that all proposals and scope of work listed in this form will meet or exceed the Building and Electrical Codes of the Commonwealth of KY and the United States as referenced in the link below:

Kentucky Department of Housing, Building and Construction

Kentucky Building Codes (Based on ICC)

<http://dhbc.ky.gov/bce/bc/Pages/default.aspx>

This would reference Horizontal and Vertical Distribution of Data, Voice and Video Cabling, Ceiling and Under Floor Distribution, Riser Access, Main Feeders, Conduit Size, Access Through Wall and Support Structures, Power Considerations, EMI Considerations, Distribution Frame (DF) Characteristics, Mounting Panels and Equipment, and Block Alignment and Connection.

By selecting "I Agree" the parties are accepting the requirements to meet the codes listed above.

Select the I Agree or I Do Not Accept the Requirements. (Required Field)

Is Plenum Cable Required? Yes//No: Identify if Plenum Cable is required for this project.

If Yes, please include a brief explanation for the requirement: List a brief explanation for requiring Plenum Cable for the project.

What are the Maximum Cat6 Cable Lengths for this Project: List the Maximum lengths of Category 6 cabling used in the project.

Backbone Distribution:

Data: List the type of cabling and the plan for the distribution of the data backbone cabling.

Voice: List the type of cabling and the plan for the distribution of the voice backbone cabling.

Video: List the type of cabling and the plan for the distribution of the video backbone cabling.

Describe the Labeling/Identification Processes for Installed Cables (Data//Voice/Video): List the labeling practices and the methods used for identifying and matching the data, voice, and video cabling from end to end of runs.

Describe the Test Verification Processes for Installed Cables (Data/Voice/Video): List the methods used for testing and verification of proper operation of cabling from end to end of runs, connections and endpoints.

Signatures and Emailing of Forms

The signing and approval process has been changed to a digital signature, saving of the document and emailing to the next person in the approval chain.

The digital signatures are required by each person; the Design Contractor, District CIO, KETS Regional Engineer and the OET Review Staff. If you do not have a digital signature saved within your computer system, the PDF file will prompt you to create a signature file to sign with. The signature file will then be stored with that user account for future use. Below are the window prompts for creating a digital signature within Adobe Acrobat.

Steps for Creating a New Digital Signature in Adobe Acrobat/Acrobat Reader:



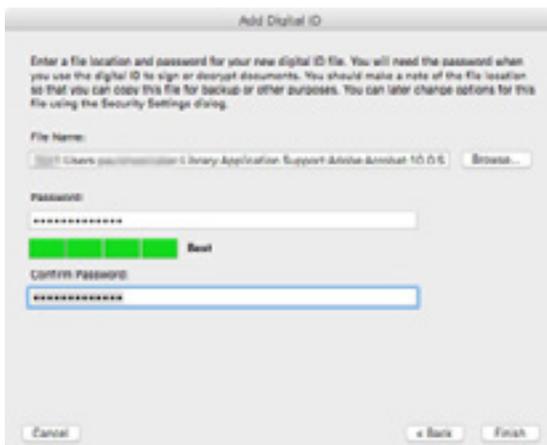
This is the prompt that appears when clicking on the digital signature box. If you already have a digital signature, click “use existing”. If you do not have a digital signature click on “Create New”.



After selecting, click “Next” to continue creating a new digital signature.



Fill out the form completely, including your full name, department, organization and email address. Select 1024-bit RSA encryption and select to use with digital signatures and encryption. Click “Next” to continue.



Use the default location to store your digital signature. Next, create a password to associate your digital signature. Make it a secure combination of upper-lower case letters, numbers and symbols. Once complete click “Finish”.

Digitally Signing and Emailing the Completed Form: The image below shows one example of the digital signature section for the Design Contractor. Please date the form and then use your digital signature by clicking in the blue signature field.

Signatures

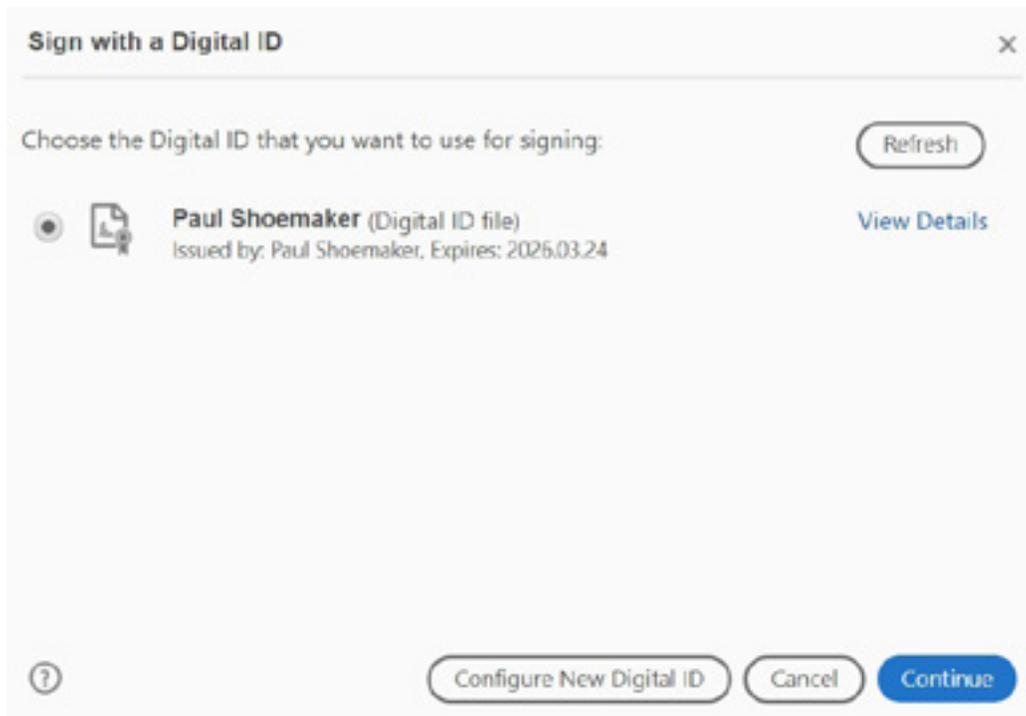
All original signatures or digital signatures must be acquired and submitted with this document. Signatories agree that information contained in this document has been validated to the best of their ability.

Design Contractor:

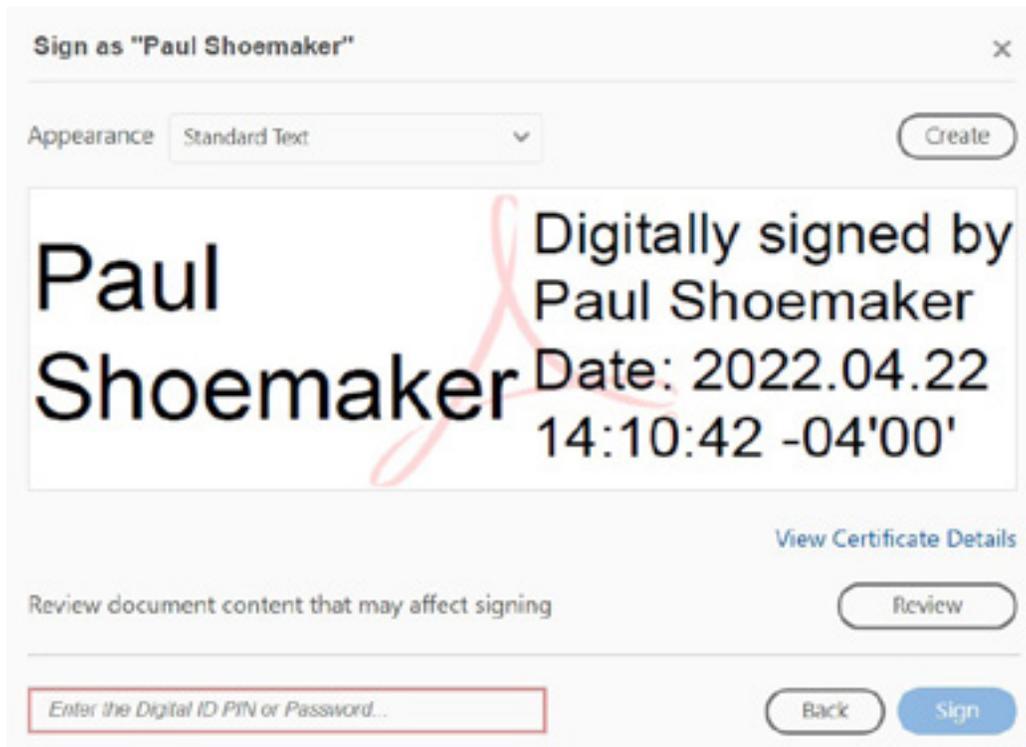
Date:



The image below shows the prompt for your digital signature after you click the blue signature bar. If you have multiple signatures stored, be sure to select the appropriate signature for this use. Click "Continue" once you have selected the signature you want to use.



The image below shows the prompt for signing your digital signature after you click “Continue”. You will need to enter your ID PIN or password and click “Sign”.



The image below shows the signed and dated form by the Design Contractor. The next step is to email the signed document for the review and signed approval, in this case it will be the District CIO.

Click on the “Email Form” button below the date of the signature area you just completed.

Design Contractor:

Paul Shoemaker

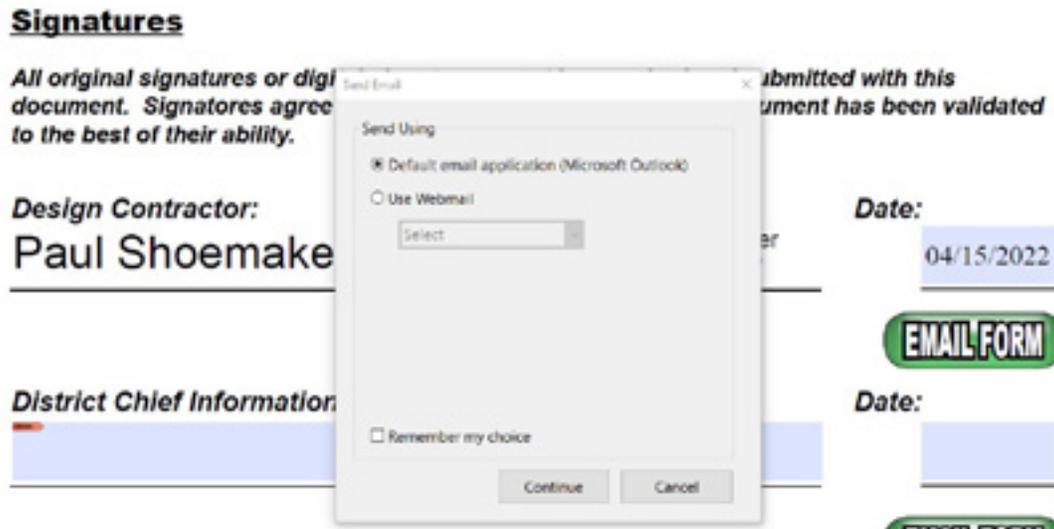
Digitally signed by Paul Shoemaker
Date: 2022.04.22 14:21:12 -04'00'

Date:

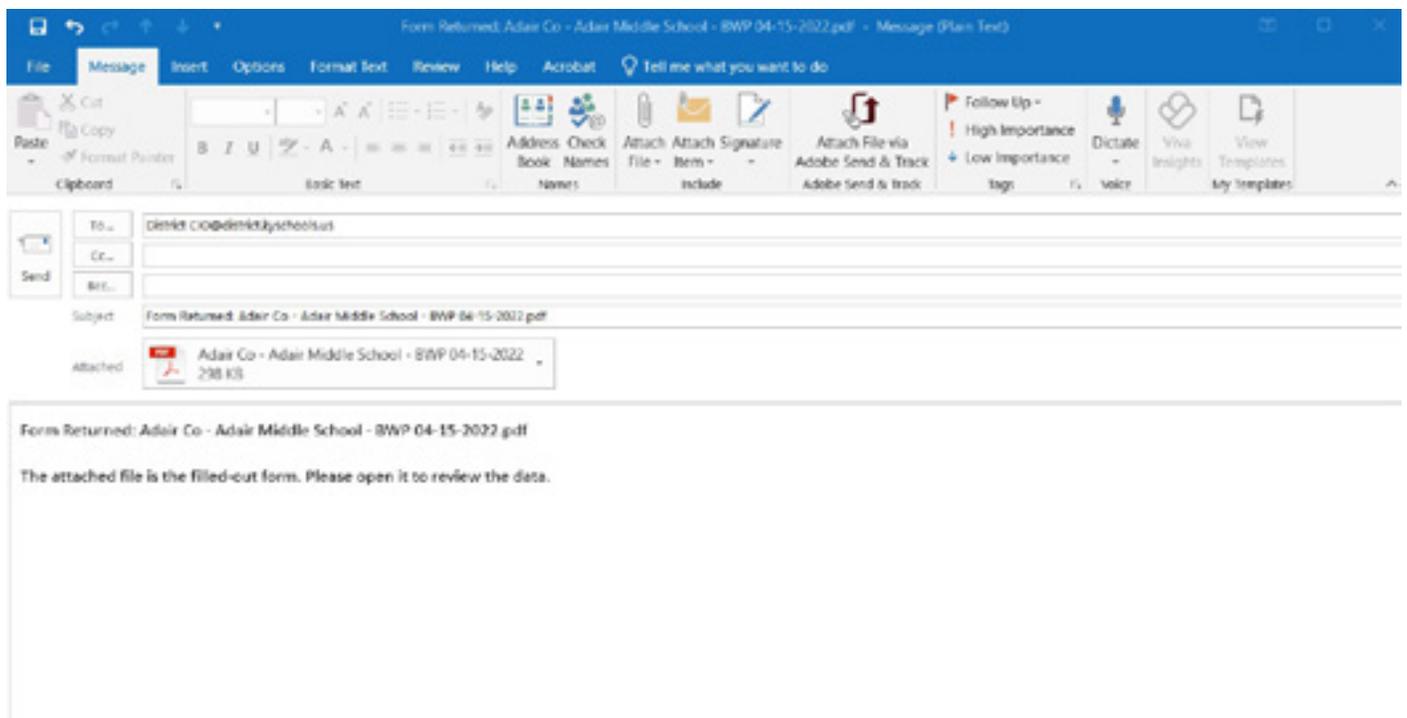
04/15/2022



The image below shows the email prompt you will see when you click the “Email Form” button. The prompt is asking if you want to use your default email system (preferred) or if you want or need to use a web mail option. Select which email you normally use (this is usually the default option) and click “Continue”.



As shown below, an email will be generated for you to complete and send. Please note that the form is automatically attached and the subject line is the name of the file that you renamed earlier. If you are the Design Contractor, you will send this email to the District CIO for their review and approval/signature. If you are the District CIO, you will send this to your KETS Regional Engineer for review and signature. If you are the KETS Regional Engineer, you will send the email to Paul.Shoemaker@education.ky.gov. After emailing the form, you may want to save a copy of the finished file for your records.



To review the work flow, you will download the form from the KDE website and rename the file using the “***District Name - Project Name - BWP mm/dd/yyyy***” format before filling out the form. Only use Adobe Acrobat/Adobe Acrobat Reader to open and fill out the form. Once the form is complete, date the form and digitally sign it. Once signed, click the “Email Form” button and send the completed form to the appropriate person in the work flow. It should follow: Design Contractor -to- District CIO -to- KETS Regional Engineer -to- Paul Shoemaker@OET - to- KDE Facilities Management.

If you have any questions regarding the Build and Technology Wiring Project Form, contact Paul Shoemaker:

Paul Shoemaker
Engineer/Solutions Architect
Division of School Planning and Project Management
Office of Education Technology

Phone: (502) 564-2020 Ext. 2425
Email: Paul.Shoemaker@education.ky.gov
300 Sower Blvd. – 4th floor
Frankfort, KY 40601