

**Jefferson County School District, R-1  
Support Services**

**CONSULTANT GUIDELINES**

**AUGUST 2022**

**Jefferson County School District, R-1 TECHNICAL GUIDELINES 2022  
Consultant Guidelines**

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## CONSULTANT GUIDELINES

### CG 001 Introduction - August 2020

- Summary
  1. The Jefferson County School District, R-1 Technical Guidelines and Consultant Guidelines are intended to provide uniform and consistent minimum quality standards for consultant services and equipment, materials, and methods used in capital construction projects, including new construction, renovation, remodeling and maintenance.
  2. The Technical Guidelines and Consultant Guidelines are founded upon considerable design, maintenance, and contracting experience and are intended to extend the life cycle of materials, systems, and facilities while reducing future maintenance problems.
  3. Technical Guidelines and Consultant Guidelines supplement and should be referenced in conjunction with the following Jefferson County School District, R-1 documents:
    - a. Consultant Agreement
    - b. Contract for Construction
    - c. General Conditions of the Contract
    - d. Educational Specifications and Site Development Standards for elementary, middle school, and high school design.
    - e. Jeffco Schools' Technical Details Drawings (formerly known as Data, Communications, and Alarm Diagrams - DCAD).
  4. The focus of the Consultant Guidelines is professional services. The Consultant Guidelines are directed toward prime- and sub-design consultants to provide standards for the performance of professional services and serve as an outline for deliverables used for Jefferson County School District, R-1 capital construction projects.
  5. The focus of the Technical Guidelines is design and construction.
    - a. The Technical Guidelines are directed toward prime- and sub- design consultants to inform design and to define both the form and content of bid and construction documents for Jefferson County School District, R-1 capital construction projects.
    - b. NOTE: Since bid and construction documents will be interpreted by both the general and sub-contractors, some Technical Guideline language applies to both Consultant (directly) and Contractor (indirectly; through the contract documents prepared by the consultant).
  6. "No Requirements" indicates that prevailing industry standards for school facilities are acceptable upon final approval of the District's Project Manager.
- Quality Assurance
  1. Compliance:
    - a. The design consultant is responsible for the quality control of the professional services provided and is accountable for a constructible, functional and maintainable design.
  2. Notification of Non-Compliance:
    - a. The consultant shall notify Jefferson County School District, R-1 in writing:

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- (1) When any portion of the Technical or Consultant Guidelines will not be met.
  - (2) When system function or satisfactory performance will be compromised by conformance to the Technical Guidelines or standard specifications.
  - (3) When there is a conflict between the Technical Guidelines or standard specifications and codes or industry standards.
  - (4) When the consultant is given design direction to which the consultant takes exception because it may be considered a violation of code or other regulations, or the provided direction has been interpreted differently by Authorities Having Jurisdiction.
  - (5) When other factors should be considered, such as design conflicts, changes in design intent, and decisions that may affect the intended program, use, or utilization of the facility or may potentially have a negative impact on systems or usability.
3. Feedback:
- a. Jefferson County School District R-1 encourages comments regarding the accuracy and updating of these Guidelines.
  - b. Questions, comments, requests for interpretation, and requests for revision are welcome and should be directed in writing to: Jefferson County School District, Facilities Planning and Construction, 809 Quail Street, Building #4, Lakewood, Colorado 80215; Or fax to 303-982-2400. E-mail address: [rhuxley@jeffco.k12.co.us](mailto:rhuxley@jeffco.k12.co.us).
- Restrictions
    1. These versions of Technical Guidelines and Consultant Guidelines supersede all previous Jefferson County School District, R-1 facility standards, Guide Standards and Technical Guidelines.
    2. The Technical Guidelines, and Consultant Guidelines are intended for use only by active project prime- and sub-consultants contracted by Jefferson County School District, R-1.
    3. The primary means of distribution of the Consultant Guidelines/Technical Guidelines is via the Jefferson County School District, R-1, Facilities Planning and Construction web-site: <http://www.jeffcopublicschools.org/services/facilities> or transmittal by the Jefferson County School District, R-1 Project Manager.
      - a. The Consultant shall verify with the District Project Manager that the most recent versions are available.
    4. The Technical Guidelines, Standard Specifications, and Consultant Guidelines are referenced in the Owner/Consultant Agreement and their use is considered binding under the terms of the Agreement. Deviations from the Guidelines and Specifications shall be identified in writing and approved by the District Project Manager.
    5. The Technical Guideline, Standard Specifications, and Consultant Guidelines are not intended to supersede the Consultants' professional judgment, expertise, or experience. They are intended to provide guidance that is based upon the District's experience and the performance of various systems and component parts that have been used in its facilities.
      - a. Consultants assume full professional responsibility for research, engineering, regulatory compliance, design, product/material/system selection, budget

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compliance, and other functions defined by statute, Owner/Consultant Agreement and prevailing standards of professional service.

6. Under no circumstances are the Technical Guidelines to be used as master specifications.
7. Jefferson County School District, R-1 assumes no liability for unauthorized use of the Technical Guidelines and Consultant Guidelines.
8. Format
  - a. Divisions 00 through 33 of the Technical Guidelines follow the Construction Specifications Institute (CSI) 2004 Master Format.
  - b. The Technical Guidelines are generally written to CSI Master Format “Level 2 or Level 3” whereas most Project Specifications will likely be written to “Level 3 to Level 5.”

END SECTION CG 001

**CG 002 Design Principles – August 2021**

- In the absence of other information, standards and recommendations of the following organizations apply:
  1. American Institute of Architects (AIA) Architect's Handbook of Professional Practice
  2. AIA Architectural Graphic Standards
  3. AIA/Associated General Contractors (AGC) Guidelines for Better Communication and Understanding within the Construction Industry
  4. Construction Specifications Institute (CSI) Project Resource Manual including MasterFormat, latest published version.
  5. NIBS Uniform Drawing System (UDS), including Standard Reference Symbols
  6. CSI Standard Abbreviations
  7. Engineer's Joint Contract Documents Committee (EJCDC) Recommended Competitive Bidding Procedures for Construction Projects
  8. EJCDC Uniform Location of Subject Matter and Information in Construction Documents
  9. Regulatory requirements itemized in Section 01 41 00
- Design Philosophy
  1. Jefferson County School District, R-1 recognizes the important role of the physical environment in accomplishing our stated mission and goals.
    - a. The District is committed to the principle that excellence in education is linked with excellence in the learning environment.
  2. Jefferson County School District, R-1 facilities should reflect the commitment of this District to quality education.
    - a. District buildings and grounds are to be attractive and stimulating environments yet functional and economical.
    - b. Facilities should be neither palatial nor austere.
    - c. Facilities should be state-of-the-art without being experimental or trendy.
  3. Design and construction excellence is judged after ten and twenty-five years of occupancy, not only at the time of initial occupancy.
- Reference Jeffco Public Schools’ Educational Specifications for additional design parameters.

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- Standard Design Heights
  1. Listed dimensions are intended to supplement or interpret but not supersede requirements of applicable codes and regulations.
  2. Dimensions are measured from finished floor unless otherwise indicated.

**STANDARD DESIGN HEIGHTS**

<b>ITEM</b>	<b>Preschool</b>	<b>Elementary</b>	<b>MS/HS/Adult</b>	<b>Notes</b>
Bench / Seat	10" - 12"	12" - 14"	14" - 18"	
Bookcase top shelf	3' - 6"	5' - 0"	7' - 0"	
Clock/Bell/Horn				See Technical Details (DCAD) Drawings
Coat hook	48"	48" - 60"	60"-66"	also see ADAAG
Controls / Switches				ADAAG
Counter (standing)	24" - 28"	28" - 30"	36" - 42"	also see ADAAG
Counter (sitting) top	20"	27"	30"	
Clear (minimum)	14"	21"	24"	
Display/write boards (bottom)	24"	24" - 30"	36"	36"
Drinking Fountain (spout)				ADAAG
Electrical receptacle Counter Wall				See Technical Details (DCAD) Drawings
Electrical Panel (top)				6' - 6" maximum (typical)
Electrical Switch				ADAAG
Fire Alarm: Pull Station Horn/Strobe				3' - 6" typical also see ADAAG
Fire extinguisher cabinet (maximum finish floor to throat)				4' - 6" typical; also see ADAAG
Food Service tray slide				34" universal height
Hand Dryer				Prohibited in student areas
Hair Dryer	N/A.	-	6' - 0"	
Lavatory (rim)	24"			also see ADAAG

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Loading Dock				24" - 36" above pavement
MLC Panel (Pole Vault system)				54" AFF, next to phone outlet
Mirror (bottom)				ADAAG
Paper Towel Dispenser				ADAAG
Shower Head				ADAGG
Soap Dispenser				ADAAG
Switch				ADAAG
Telephone outlet:				18" AFF
Data Outlet (data only, voice / data combo; coax and projector cabling)				18" AFF
Thermostat				60" AFF typical
Toilet Paper Dispenser				Coordinate with dispenser and grab bar
Urinal (rim)				ADAAG
Window sill				43" permits shelving below

END CG 002

**CG 003 Procedures - August 2021**

- Coordination
  1. The District's assigned Project Manager typically serves as the primary liaison for Jefferson County School District, R-1 This individual is referenced herein and in the Technical Guidelines as the "District Project Manager".
  2. The District Project Manager is the point of contact for all communication on a project.
- Design Process
  1. Jefferson County School District R-1 designs capital improvements through an open collaborative process including technical and non-technical staff, citizens, and representatives of other stakeholder groups who constitute the Design Advisory Group (DAG).
  2. If possible, involve students in the planning, design, and construction processes for the purposes of representing the largest user group, broadening learning, understanding the practical applications of curriculum, and exposure to career options.
- Reference Documents
  1. If available, reproductions of documents pertaining to existing construction are made available to active design consultants on an as-needed basis at no cost and as follows:
    - a. Reproducible and electronic file of most current site survey

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- b. Copy of most current geotechnical report, in PDF format.
  - c. Copy or .DXF transfer file of existing as-constructed CAD, text, spreadsheet, and database files via compact disc or ftp site.
  - d. Prints of existing record drawings: Limit 1 of each.
  - e. Copy of existing hardcopy record project manuals, specifications, reports and other hardcopy information:
    - (1) Limit 1 each.
  - f. Each project is assigned a location code and other project relevant information at the beginning of the project. This information will be transmitted to the consultant by the District Project Manager. This information will be required during the various phases of the work and for archiving purposes.
2. Jefferson County School District, R-1 charges full cost for the creation of other reproducible drawings, new drawings, or other special order graphics.
- Meetings
    1. Consultant or Contractor meetings with school staff, students, administration, municipality, or community are prohibited unless coordinated, directed, or accompanied by the District Project Manager, or his/her designated representative.
    2. The Consultant is responsible for recording and distributing written records of all project-related meetings through construction contract award.
    3. The Contractor is responsible for recording and distributing written records of all project-related meetings from pre-construction through project closeout.
  - Permit Fees
    1. Initial Building Permit fee is paid directly by Jefferson County School District, R-1.
  - Permits and Approvals
    1. Coordinate and process the Building Permit solely and directly through the Facilities Planning and Construction, Jefferson County School District, R-1.
  - Remodel/Retrofit Projects
    1. Field-verify information provided by Jefferson County School District, R-1.
      - a. The consultant is responsible for field verification of all elements that may be relevant to the work, including above ceiling conditions, in areas to be disturbed by proposed work.
    2. Field-verify critical conditions and dimensions required for each deliverable.
    3. Clearly identify and distinguish between existing, salvaged, relocated, demolished, abandoned, removed and new construction.
    4. Define disposition, delivery, and storage of salvaged items.
  - Xcel Rebate Program Procedures
    1. Jeffco Coordinating Engineer will attend design reviews and ask specific questions based on knowledge of rebate opportunities. Questions will include counts on different pieces of equipment (ex. VFDs, or details on lighting retrofits, etc.)
    2. Coordinating Engineer to add projects to JEEP (Joint Energy Efficiency Plan) which is sent to Xcel for approval.
    3. The JEEP is our master document that tracks rebates with Xcel. Rebate programs are updated frequently and requirements become more restrictive. If a project is in the JEEP, the date is locked in. This safeguards our rebates against project delays and changes in criteria of rebate programs. We have incentive to enter projects into the JEEP ASAP.



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4. Paperwork to flow through Project Manager (from consultant) to the Coordinating Engineer. Include material and labor costs. See Checklist of Needed Information.
  5. Xcel reimburses up to 60% of total costs. If we install a VFD and only provide material costs, we lower our potential rebate.
  6. Project Manager to check on status of rebates with contractor when the pay-app for 50% completion is submitted. Rebates received at time of purchase shall be given to Jeffco at this point (if not already).
  7. Coordinating Engineer to fill out rebate paperwork and submit to Xcel. Lighting rebates to be filled out by CLEAResult and submitted to Xcel. Coordinating Engineer responsible for tracking status of all rebates.
  8. Checklist of Needed Information to be Gathered by Consultant. Coordinating Engineer does paperwork & sends to Xcel.
  9. General Requirements
  10. Manufacturer, Model #, and Quantity are needed for every rebate. If multiple models are used, each must be included, quantities must be very clear. Provide summary sheet tagging all equipment under consideration for rebate.
  11. Include invoices for labor and materials in addition to manufacturer cut sheets. (Has to be an invoice rather than PO or other forms.)
  12. Specific Requirements
  13. Cooling Efficiency Rebates require Cut sheets that will detail Tons/Unit as well as efficiency information – EER, FLV, IPLV, NPLV, SEER. Must qualify per efficiency ratings. After 9/1/2015, RTU's, PTAC, and air cooled chillers will be discounted at point of purchase.
  14. Drive Rebates require Drive HP, Motor HP, Motor RPM, Open (OLV) or Closed Drive and cut sheets. Rebates are for new and replacement VFDs.
  15. Motor Rebates require the following for the new and the replaced motors. Motor Type (Open or Closed), RPM, Nominal Efficiency at full load, HP, the end use (fan, pump, etc.), manufacturer and model # of new and old motors.
  16. Heating Efficiency (for Xcel Gas Customers only) MBH of Boiler, Average fluid temp, R-value of piping insulation, linear feet of piping for every pipe size.
  17. Lighting rebates will be handled by CLEAResult, requirements can vary. We will contact CLEAResult at the beginning of each project to ensure that the needed information is gathered.
- Accounting
    1. Forms:
      - a. Unless otherwise authorized by Jefferson County School District, R-1, only the following Jefferson County School District, R-1 standard forms will be accepted:
        - (1) Consultant Agreement
        - (2) Fee Adjustment
        - (3) Application for Payment of Consultant Fee
        - (4) Labor, Material and Performance Bonds
        - (5) Construction Agreement
        - (6) Contractor's Request for Payment, Estimate for Partial Payment, Payment Record of Subcontractors/Material Suppliers
        - (7) Change Order
        - (8) Subcontractor / material supplier payment record

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2. Application for payment of fees cannot be processed until:
  - a. A formal agreement or letter of proposal is accepted and countersigned by the Executive Director, Facilities and Construction Management, Jefferson County School District, R-1
  - b. A purchase order is processed and countersigned by the Executive Director, Facilities and Construction Management and Director, Capital of Programs, Jefferson County School District, R-1
  - c. Unless otherwise authorized by Facilities Planning and Construction, Consultant invoices for a single project may be submitted no more frequently than monthly.
  - d. Mandatory end-of-month application for payment is required on June 30 (end of District fiscal year).
    - (1) Submit no later than July 9
    - (2) For work through June 30
3. Supplemental Fees
  - a. Submit a formal written proposal with hourly rates and a top set maximum total fee adjustment.
  - b. Do not proceed with additional work until supplemental fee is authorized by the Executive Director, Facilities and Construction Management Director of Facilities Planning and Construction.

**Document Distribution Schedule:**

<b>Distribution</b>	<b>Pre-Design</b>	<b>Schematic</b>	<b>Des. Devel.</b>	<b>CD Review</b>	<b>Bid Sets</b>
Facilities Planning and / Construction / Facilities Services Team	3	6	6	6	2
Electronic Version (PDF) Drawings & Specifications	1	1	1	1	1
DAG/Principal	1	1	1	1	1
Shared Reference Set (*)	1	1	1	1	1
Rack Set	0	0	0	0	1
Public Safety Section	0	A	A	A	1
Environmental Services	A (1)	A (1)	A (2)	A (2)	*
Fire Department	0	A	A	*	*
Other Agencies (Municipality, Planning, Drainage, Zoning, Health, Highway, Utility, etc.)	*	*	*	A	A
State Geologic Survey	A	A	0	0	0

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General Contractor or CM/GC	0	A	A	A	All Remaining (3 minimum)
Major Subcontractors	0	0	0	0	Minimum 1 each
Xcel/IREA	0	0	A	1	1
Plan Rooms (pick-up only)	0	0	0	0	Per Invitation
<b>MINIMUM TOTAL</b>	<b>5</b>	<b>8</b>	<b>8</b>	<b>9</b>	<b>Per agreement</b>

A = As required for specific project

**\*Shared Reference Set(s):**

- |  |                             |
|--|-----------------------------|
| Achievement Directors                                      | Food and Nutrition Services |
| Communications   | Information Technology      |
| Chief Operating Officer                                    | Infrastructure Services     |
| Energy Managers  | Library Services            |
| Executive Director, Facilities and Construction Management | Risk Management             |
| Facilities Maintenance                                     | Transportation              |

Prior to printing verify with District Project Manager half-size set count.

4. Documents reviewed by Jefferson County School District, R-1 shall be prepared in the form of redlined plans and annotated specifications.
  - a. These documents will be reviewed with the Design Team.
  - b. Comments will be provided to the Design Team by the District in electronic format (PDF).
5. Only the District Project Manager is authorized to accept delivery of equipment or spare parts specified to be delivered to the owner.
  - a. The specifications shall define time of delivery as a milestone early in the project and relative to some identifiable event.
6. Warranties:
  - a. Reference “General Conditions” for warranty periods and conditions except for special conditions, e.g. 5-year warranty on refrigerant compressors or 10 year on water heaters.
7. When the contractor submits a request for substitution of the equipment specified, he shall include in his submittal complete drawings to the same level of detail as the construction documents.
  - a. With written permission of Jefferson County School District, R-1 the contractor may hire the consultant to prepare the drawings.
8. Roofing details relating to the installation of mechanical equipment shall be shown on Architectural or Roofing drawings not on Mechanical.
9. Do not attach or route any mechanical components directly to the roof in any manner that could interfere with future roof maintenance or roofing replacement.
10. Design Documents shall include a list of all parts and equipment deliverable to the owner (meters, gauges, valve handles, etc. etc.).

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11. Design Documents for renovation of existing equipment or piping shall include a specific list of work items.
  - a. Statements of a global nature to rehabilitate "as required or "as necessary" are not acceptable.
12. Design Documents for modification or demolition of existing systems shall include drawings of equipment and materials to be removed, i.e. specifically define the scope.
  - a. Statements of a global nature such as "Remove all pipe in this area" are not acceptable.
13. Carefully and completely coordinate between Fire Alarm, Electrical, Temperature Control and Mechanical disciplines for the installation of Combination Smoke and Fire Dampers.
  - a. Fire and Smoke dampers shall be included in the Coordination Schedule.
14. The Architectural and Engineering design shall accommodate the largest and heaviest equipment listed as "acceptable" in the specifications.
  - a. This includes structural loading capabilities and mechanical spaces.
15. Pay particular attention to the O&M Manual requirements. Assure that all project drawings, including temperature control diagrams and electrical one-line diagrams, appear in the same drawing format and size as that used for the other project drawings.

END OF SECTION CG003

**[CG 004 Capital Improvements Not Funded Through the Board of Education – August 2015](#)**

- Volunteer, donated, and site-funded capital projects are not exempt from Jefferson County School District, R-1 policies, standards, and procedures.
- The School's Facility Manager will be notified of any request to physically modify a facility. The Facility Manager will submit the initial Work Order Request.
  1. Submit a Work Order Request to the Facilities Information Center (303 982 2245) with attachments addressing items 2 through 8 below.
    - a. The Work Order is the key document for project coordination.
      - (1) Outline the proposed project in the greatest detail possible.
    - b. The "Requestor," "Requestor to Fund," and "Fund Commitment" information must be completed and authorized by the school principal/site manager.
  2. Designate one primary project spokesperson to work with Field Services staff. Include name, address, telephone, and fax numbers.
    - a. Identify company name and include business card, if applicable.
  3. Identify the project Architect/Engineer/Designer of record.
    - a. Regardless of project scope or cost, a qualified individual needs to assume full responsibility for project compliance with applicable laws, codes, regulations, standards, and procedures through professional or semi-professional design, documentation, specifications, and estimates.
    - b. The Architect/ Engineer/ Designer of record is responsible for project compliance with:
      - (1) Jefferson County School District R-1 Technical Guidelines

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- (2) Jefferson County School District R-1 Board of Education Policies on Facilities
- (3) Jefferson County School District R-1 Educational Specifications
- (4) AHERA Management Plan
- (5) Colorado Revised Statutes governing Public School construction
- (6) Applicable Building Codes, Regulations and Standards
4. Professionally prepared, sealed, and signed construction drawings and specifications are mandatory for projects involving construction in areas of human occupancy.
5. Financial matters
  - a. Identify proposed funding or donation sources for material, labor, and contract costs.
  - b. The School District is not obligated to make financial contributions toward site-funded projects.
  - c. Construction on School District property cannot proceed without prior evidence of adequate funding or other resources to fully complete the project.
  - d. Jefferson County School District, R-1 Field Services reserves the right to charge current hourly rates for employee time expended in assisting, coordinating, reviewing, inspecting, and correcting site-funded projects.
  - e. Develop or coordinate lease terms through Property Management office as necessary.
6. Project Schedule
  - a. Regardless of project size, submit a written project development schedule allowing for the following typical sequence of events:
    - (1) Initial work order processing: 5 working days
    - (2) Preliminary scope development and estimate
    - (3) Preliminary design consultation and coordination
    - (4) Geotechnical investigation
    - (5) Site survey
    - (6) Schematic design and design development per Technical Guidelines
    - (7) Schematic design and design development reviews
    - (8) Construction documents per Technical Guidelines
    - (9) Construction document review
    - (10) Building permit:
      - (a) Allow 60 days between application and permit
    - (11) Bid
    - (12) Construction
    - (13) Closeout
    - (14) As-Constructed documentation
    - (15) Acceptance
    - (16) Occupancy permit
  - b. Upon project completion, formally convey the project ownership to Jefferson County School District, R-1
7. Responsibility Matrix
  - a. If the project is not intended to be competitively bid, identify the General Contractor / Subcontractor / Vendor / Volunteer responsible for the entire project or each project component.

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- b. To expedite the process, items 5, 6, and 7 may be combined into a scope of work spreadsheet identifying the responsible party, dollar cost/donation status, and schedule for each work item/subcontract necessary to complete the project.
8. Legal matters:
  - a. Board Policy KCD Public Gifts / Donations may apply.
  - b. Board Policy EC Buildings/Grounds/Property Management may apply.
  - c. Submit a copy of the proposed contractor's liability insurance certificate.
  - d. Submit the proposed contractor's written Waiver of Liability releasing Jefferson County School District, R-1 from liability associated with the project.
  - e. Proof of Workmen's Compensation insurance is mandatory except when work is under the direct supervision and control of the principal or site manager.
  - f. Performance and Payment Bonds may be required for projects exceeding \$50,000 total value.
  - g. Jefferson County School District, R-1 standard General Conditions of the Contract for Construction apply.
  - h. The consequences of default or lack of completion are of particular concern to the School District.

END SECTION CG 004

**CG005 Documentation Formats - August 2018**

- In the absence of other information, standards of the following organizations apply:
  1. Construction Specifications Institute (CSI) Project Resource Manual.
  2. National Institute of Building Sciences (NIBS) Uniform Drawing System (UDS)
- CAD
  1. Computer Aided Drafting (CAD) electronic media is required for Jefferson County School District,R-1 graphic deliverables:
    - a. Contract Documents and As-Constructed Record Drawings for capital construction and as otherwise required by the District Project Manager.
    - b. Shop Drawings: Refer to Technical Guidelines.
    - c. Consultant reports, reviews, and deliverables defined in these Consultant Guidelines.
    - d. Other graphic documents originally created in electronic media.
  2. CAD File Format
    - a. 3-Dimensional CAD is mandatory for site survey and civil engineering submittals.
    - b. AutoCAD files require the completion of the following additional steps:
      - (1) Documents created using Paper Space and Model View require Model space elements to be created at 1:1 scale. Do not scale model space drawings.
      - (2) Perform standard file purge, file compression and recovery until file is clean.
      - (3) Remove unnecessary layers, linework and any other CAD elements that clutter the CAD file.
      - (4) Furnish all X-References, images, plot files (CTB or STB) and any other files required by the original CAD files to properly depict information.

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- c. Files generated on other CAD software are acceptable in the standard .DXF or IGES file translation methodology including the following:
  - (1) "Unbundle" all splines, blocks and other unique elements to original primitive elements before saving in .DXF format.
  - (2) Execute all available methods of repair diagnostics and recovery to assure a totally uncorrupted document.
  - (3) Furnish ASCII.txt files of expected layering, color-pen designations, etc.
3. CAD As-Constructed Record Document Display Files (Mandatory)
  - a. All CAD files shall be converted to Adobe PDF formatted electronic files.
  - b. Limit content to the exact information that appears on the As-Constructed plot.
  - c. Other reference information such as monument points is prohibited on any level, or outside the border boundary
  - d. One document (drawing sheet) per file
  - e. As-Constructed notation with date
4. CAD As-Constructed Native Production Files (Optional)
  - a. Copies of the consultant's As-Constructed working files including font files, shape files, etc. will be permanently archived on electronic media to keep the consultant's original innate document intelligence intact.
  - b. Compressed file of consultant's native format
  - c. Uncompressed (ASCII) README.TXT file describing layering technique, compression system, and restoration instructions.
- Adobe.pdf
  1. Format for all non-native electronic submittals
  2. Indexed and searchable: Adobe.pdf format is required for design submittals, final and As-constructed Record Text documents, including reports and project manuals.
  3. Standard Adobe.pdf format (direct from CAD file, not scanned) is required for final and As-constructed Record Graphic documents and drawings.
- Electronic File Transfer
  1. USB Flash Drive. All required data shall be submitted on one (1) single USB flash drive device. For folder structure refer to CG018, third bullet point.
    - a. USB Flash Drive Identification:
      - (1) Facility name and district's project number
  2. File Transfer Protocol (.ftp)
    - a. Allowed only with approval of the Jefferson County School District Archivist.
    - b. Consultant loads files onto his/her .ftp site
    - c. Consultant Emails notification with .ftp site address to Jefferson County School District, R-1 Facilities Planning and Construction Archives.
    - d. Facilities Planning and Construction Archives downloads files into its network.
  3. Email:
    - a. Allowed only with approval of the Jefferson County School District Archivist.
  4. Optical media (CD and DVD) transfer is not accepted.
  5. The originator of the file exchange is responsible for taking appropriate security and virus protection precautions before transmitting electronic information, regardless of mode of transfer.
- Graphic (hard copy and reproducible) media
  1. Presentation Board:

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- a. 30" x 42" with 2" minimum border at all 4 sides.
2. Opaque original other than presentation board
  - a. 8 1/2" x 11"
  - b. 11" x 17"
  - c. 24" x 36"
  - d. 30" x 42"
3. CAD Plots
  - a. Laser or inkjet on high quality bond paper with 24lb bond being the minimum allowed.
  - b. Paper and temperature sensitive Mylar are prohibited.
  - c. Direct image only.
    - (1) Reverse image not permitted.
4. Quality
  - a. Originals or first generation copies only.
  - b. Documents will be scanned as part of project acceptance and closeout.
  - c. Scanning reads the surface of the document which requires that background "noise" be minimized (i.e. screens, hand cast shading, poché, and other graphic techniques that can hide or garble lines, rebar section, dimensions, etc. must be single side and light or non-existent).
  - d. Any document that cannot produce a legible scan will be returned for corrective processing.
5. Reproducible Intermediates (Sepia) are prohibited.
- Drawing Conventions (apply to all drawings itemized in CG012)
  1. Adhere to conventions of the NIBS Uniform Drawing System (UDS).
  2. Sheet Orientation:
    - a. Long dimension = horizontal
  3. North Orientation
    - a. A north arrow is mandatory for each and every plan drawing, including structural, mechanical, electrical, including partial, detail, and key plans.
    - b. Orient plan drawings so that North is within 90 degrees of top of drawing sheet (North between straight up and straight left is preferred).
    - c. North arrow should be consistently oriented throughout the entire drawing set.
  4. Cross Reference Orientation
    - a. Room names and numbers
    - b. Structural grid
  5. Border:
    - a. 1/2-inch minimum, all sides
    - b. Binder margin must be adequate to read the entire drawing without disassembly of the bound set.
  6. Title block: at right edge or lower right corner.
  7. Key Plan:
    - a. One reference or key plan showing the entire facility is required for all projects, regardless of scope.
    - b. Key plan is mandatory on each sheet containing plan drawing(s) of:
      - (1) Anything less than the entire building plan.
      - (2) A partial site project.



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- (3) Project that has multiple buildings
  2. Content:
    - a. Sheets containing shared information are not recommended
      - (1) One building or location per sheet is strongly preferred.
      - (2) Mixing more than two types of information (i.e. plans and sections; mechanical and electrical; HVAC air handling and HVAC piping; plumbing and HVAC) per sheet is prohibited unless approved by the District Project Manager.
  3. Integrity / Legibility
    - a. Per established drafting conventions:
      - (1) Contiguous lines shall touch or intersect and
      - (2) Lines representing unconnected components or elements shall not touch or intersect at any point.
    - b. Lettering:
      - (1) 9 point or .10-inch minimum font.
    - c. Annotations: Apply only to the drawing upon which they appear.
  4. Sequence plan drawings:
    - a. From lowest level to highest level
    - b. From campus to entire building to wing to area to detail plan
  5. Clearly distinguish between areas of new construction, existing, and remodeling.
  6. To the greatest extent possible, avoid mixing types of information on a single sheet (plans with sections, site with architectural, etc.).
    - a. For limited scope projects, required drawings may be combined onto single sheets as appropriate for the project and approved by the District Project Manager.
- Title block
    1. Per NIBS Uniform Drawing System (UDS)
    2. Drawing number
    3. Total sheets in set
    4. Project identification:
      - a. The Official Project Title as assigned by Jefferson County School District, R-1 is to remain constant for all deliverables from pre-design through the post-construction period.
      - b. The official project number as assigned by Jefferson County School District, R-1 is to remain constant for all deliverables from pre-design through the post-construction period.
    5. Drawing title(s)
    6. Dates (original, revised, As-Constructed, etc.)
    7. Consultant firm name
    8. Sub-consultant firm name (Title sheet + each sheet of sub-consultant discipline)
    9. Professional seal and signature
  - Drawing Numbering
    1. Per NIBS Uniform Drawing System
    2. Index by total drawings in the complete document set, not just the sub-set.
      - a. Example: If set consists of title sheet + 2 L drawings + 6 A drawings + 1 P drawing + 10 M drawings + 5 E drawings, label the 5th M drawing "Sheet M5 of 25".

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3. Supplemental drawings:
    - a. To the greatest extent possible, annotated original drawings are preferred over supplemental drawings.
  4. Prior to the Design Development submittal (or approximate equivalent) of a project, Jefferson County School District R-1 Archives will assign a code to be inserted along the right hand border of each drawing sheet, running vertically. This code shall appear on all drawing versions beginning with Design Development. Reference CG 018 for additional information.
  5. Text size shall be 16 pt.; text font shall be Arial bold.
- Scales
    1. Surveys:
      - a. 1" = 10'; 20'; 30'; 40'; 50'
      - b. Contour Interval = 1 foot
    2. Site drawings:
      - a. Same as Surveys or:
      - b. 1/16"; 1/8"; 1/4"
    3. Plans:
      - a. 1/8"; 1/4"; or 1/16"
    4. Detail and Partial Plans:
      - a. 1/4", 3/8" or 1/2"
    5. Elevations:
      - a. Match scale of plans
    6. Building Sections:
      - a. Match scale of plans
    7. Partial, Wall, and Detail sections:
      - a. 3/8"; 3/4"
    8. Details:
      - a. 1½"; 3"; Full scale
    9. Interior Elevations:
      - a. 1/8", 1/4"
    10. Graphic scales are required on all drawings.
  - Reports
    1. Identification
      - a. District project title and project number
      - b. Submittal / Phase Title
      - c. Consultant(s) name, address, telephone, fax, email
      - d. Sub consultant(s) name, address, telephone, fax, and email as appropriate
      - e. Date
      - f. "Not for Construction" as appropriate
    2. Executive summary:
      - a. Required for reports exceeding 50 pages.
    3. Table of Contents
    4. Sequential numbers on each and every page.
    5. Professional Certificate, Signature, and Seal as appropriate.
  - Construction Cost Analysis

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1. Cost estimates must be unambiguous as to the inclusion or exclusion of the following factors:
  - a. Demolition/Abatement
  - b. Off-site infrastructure
  - c. Utilities and tap fees
  - d. Owner supplied materials
  - e. Equipment
  - f. Furnishings
  - g. Casework and shelving
  - h. Technology and communications
  - i. Professional fees
  - j. Other fees and permits
  - k. Testing
  - l. General Conditions
  - m. Contractor overhead and profit
  - n. Management expense
  - o. Contingency
  - p. Estimate basis:
    - (1) RS Means Index or Year and quarter
- Building Code Analysis
  1. Fire Zone
  2. General Height and Area; Number of Stories
    - a. Allowable Floor Area
    - b. Allowable Area Increases
    - c. Actual / Proposed Area Tabulation
      - (1) Gross and net square feet
  3. Use and Occupancy classification(s)
  4. Construction Types
  5. Fire Rated Construction
    - a. Exterior walls
    - b. Openings
  6. Fire Protection
  7. Egress
    - a. Occupant Load Tabulation or Graphic Representation
    - b. Exit System (description)
    - c. Requirements based on Occupancy Group
    - d. Maximum Travel Distance
    - e. Special Hazards
    - f. Other
  8. Roof Design
    - a. Conditions of all roof sections
    - b. Fire Retardancy
    - c. Drainage
  9. Mechanical System
    - a. HVAC
    - b. Plumbing; fixture count

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10. Electrical System
  - a. Service and Distribution
  - b. Lighting
11. Accessibility
12. Other
  - a. Itemize interpretations or variances allowed or being considered.
13. Description of Existing and Proposed Construction
  - a. Basement
  - b. First Floor Assembly
  - c. Second Floor Assembly
  - d. Roof / Ceiling Assembly
  - e. Columns
  - f. Beams
  - g. Exterior walls (bearing and non-bearing)
  - h. Interior bearing walls
  - i. Partitions
  - j. Shaft enclosures
- Project Manual
  1. To the greatest extent possible, the Project Manual, including Project Specifications, should conform to the principles and formats of the current edition of the CSI Project Resource Manual.
- Project Development and Construction Schedules
  1. No Requirements
- Bid Tabulation
  1. Prepare, print, and distribute prior to bid opening
  2. Identification
    - a. Jefferson County School District, R-1
    - b. Project Title, number, other identification
    - c. Bid date and time
  3. Format:
    - a. Matrix for compiling the following information from the anticipated number of bidders:
      - (1) Bidder
      - (2) Bid Signed
      - (3) Bid Security
      - (4) Receipt of each Addendum
      - (5) Bonding Company
      - (6) Completion Date
      - (7) Base Bid
      - (8) Each Bid Alternate
      - (9) Other
- Field Report
  1. Identification
    - a. Project Title
    - b. Project number
    - c. Inspector; firm

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- d. Date and time
- e. Attendees
- f. Sequence number
- 2. Project Conditions
  - a. Personnel/sub-contractors on site
  - b. Weather
- 3. Observations
- Project Meeting Minutes
  - 1. Identification
    - a. Project Title
    - b. Project number
    - c. Project Meeting date/time
    - d. Attendees
    - e. Distribution of Minutes
  - 2. Project Conditions
    - a. Personnel/sub-contractors on site
    - b. Weather
  - 3. Construction Schedule
    - a. Behind Schedule
    - b. Ahead of Schedule
    - c. 2 week plan
    - d. Fabrication + Delivery
    - e. Issues and corrective measures
  - 4. Field Observation
    - a. Items requiring attention of contractor
    - b. Items requiring attention of design consultant
    - c. Items requiring attention of Jefferson County School District
  - 5. Field Quality Control
    - a. Test Reports
    - b. Field Reports
    - c. Other
  - 6. Requests for Information
  - 7. Change Requests, Proposal Requests
  - 8. Submittals
  - 9. Corrections to previous minutes

END SECTION CG 005

**CG006 Consultant Services and Deliverables - August 2015**

- Jefferson County School District, R-1 standards and general requirements for consultant services and deliverables including:
  - 1. Site Survey (CG007)
  - 2. Geotechnical Engineering (CG008)
  - 3. Site Master Plan (CG009)

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4. Pre-Design or Building/Facility Master Plan (CG010)
  5. Schematic Design (CG011)
  6. Design Development (CG012)
  7. Construction and Bid Documents (CG013)
  8. Retrofit Roofing (CG014)
  9. Asbestos Abatement (CG015)
  10. Construction Contract Administration (CG016)
  11. Post-Construction (CG017)
- General
    1. Reports, Studies, Project Manuals, Drawings, and other deliverables will become part of the School District's permanent archives.
      - a. Should be professional quality in form, content, grammar, and spelling.
    2. Master Plan, Pre-Design, Schematic Design, and Design Development documents should be meaningful to both technical and non-technical reviewers.
    3. Contents should be clear, concise, and above all relevant to the specific project, site, or facility.
      - a. Extraneous boilerplate, irrelevant standards, ambiguous filler, and superfluous references (such as non-applicable codes) are not acceptable and may be returned for re-writing.
    4. It is expected that the design team coordinate all facets of the design and construction documentation, including coordinating consultants contracted separately by the District, if part of the project.

END SECTION CG 006

**CG007 Site Survey - August 2015**

- Registered professional surveyor services are commissioned separately and in advance of:
  1. New Construction
  2. Additions
  3. Site redevelopment projects
- Registered professional surveyor services may be commissioned separately following the completion of the above-referenced projects for the purpose of updating the original survey to As-Constructed status.
- Comply with ALTA/ACSM Land Survey requirements.
- GIS Standards.
- Coordinate buried utility locations through the Utility Notification Center of Colorado.
- Scope of Professional Services
  1. Review documentation available from Jefferson County School District, R-1 including but not limited to:
    - a. Most recent site survey
    - b. Archived drawings
    - c. Relevant reports and studies
  2. Inspect the site with School District staff and others
  3. Review Title Commitment provided by Jefferson County School District, R-1.

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4. Meet periodically with School District staff and other individuals.
5. Survey the site
- Content
  1. General Information
    - a. North Arrow
    - b. Names of Adjacent owners
    - c. Acreage Tabulation
    - d. Scale:
      - (1) Graphic and written
  2. Legal Description
    - a. Locate the site to the nearest 15 seconds of Longitude and Latitude
    - b. Township, Range, Section, and Quarter Section
    - c. City, County, State
    - d. Subdivision
    - e. Lot and Block Number
    - f. Street and Number
  3. Boundary Information
    - a. Identification of corner markers
    - b. Encroachments or protrusions
    - c. Boundary fences and ties to actual boundary line
    - d. Distance and bearing of each boundary line
    - e. Radius and length of each curve
    - f. Tie to block corner or other suitable survey marker
  4. Setbacks, Utilities, and Easements
    - a. Easements with purpose and agency having jurisdiction
    - b. Set back restrictions at front, sides, rear, and agency having jurisdiction
    - c. Gas mains:
      - (1) Location,
      - (2) Manhole location,
      - (3) Size,
      - (4) Pressure
      - (5) Existing connection for this property
      - (6) Agency having jurisdiction
    - d. Water mains:
      - (1) Location
      - (2) Size
      - (3) Existing connection
      - (4) Agency having jurisdiction
    - e. Storm sewers:
      - (1) Location
      - (2) Manhole locations
      - (3) Size
      - (4) Invert elevation at MH and cleanouts
      - (5) Grade
      - (6) Capacity
      - (7) Existing connection

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- (8) Agency having jurisdiction
- f. Sanitary sewers:
  - (1) Location
  - (2) Manhole locations
  - (3) Size
  - (4) Invert elevation at MH and cleanouts
  - (5) Grade
  - (6) Capacity
  - (7) Existing connection
  - (8) Agency having jurisdiction
- g. Buried power line:
  - (1) Location
  - (2) Size of line
  - (3) Agency-having jurisdiction
- h. Overhead Power line:
  - (1) Location of poles/towers
  - (2) Size of line
  - (3) Agency having jurisdiction
- i. Telephone / Communications line:
  - (1) Depth or location of poles/towers
  - (2) Size of line
  - (3) Agency having jurisdiction
- j. CATV lines:
  - (1) Location
  - (2) Agency having jurisdiction
- 5. Topographic Information
  - a. Bench mark, including elevation, description
    - (1) Where permanent structures exist on-site, use or reference existing finish floor elevation(s) (FFE).
  - b. Contour interval = 1' - 0"
  - c. Spot elevations adjacent to existing building
- 6. Drainage
  - a. Identify receiving waters of site runoff including storm sewer system.
  - b. Identify on-site and adjacent site elevations that may require designation of mapped or identified 100-year flood plain.
- 7. Existing Improvements
  - a. Locations and elevations of:
    - (1) Pavement
    - (2) Storm drainage improvements
    - (3) Open ditches and natural water courses including:
      - (a) Width
      - (b) Depth
      - (c) Flow direction
      - (d) Drainage area
      - (e) Agency having jurisdiction
    - (4) Sidewalks,



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- (5) Adjacent road centers,
- (6) Alleys,
- (7) Dividing islands,
- (8) Curbs,
- (9) Gutters,
- (10) Storm water outlets
- (11) Existing structures (use first floor elevation for elevation note)
- (12) Trees over 4" caliper
- (13) Poles
- (14) Other features
- b. Type of pavement material
- c. Subsurface conditions such as:
  - (1) Cesspools
  - (2) Septic tanks
  - (3) Foundations
  - (4) Basements
  - (5) Oil or gas storage tanks.
- Deliverables
  - 1. 3 dimensional CAD file
  - 2. Native file converted to Adobe.pdf
  - 3. Plot of electronic file
  - 4. See Section CG 005 for format requirements

END SECTION CG007

**CG008 Geotechnical Engineering - August 2015**

- Professional geotechnical engineering services are commissioned separately and in advance of:
  - 1. New construction
  - 2. Additions
  - 3. Major site redevelopment projects
- Coordinate buried utility locations through the Utility Notification Center of Colorado and District Project Manager.
- Scope of Professional Services
  - 1. Review documentation available from Jefferson County School District R-1 including but not limited to:
    - a. Most recent site survey
    - b. Preliminary project scope statements and design concepts
    - c. Previous geotechnical reports
    - d. Archived drawings
    - e. Other relevant reports and studies
  - 2. Inspect the site with School District staff and others
  - 3. Locate buried utilities and obstructions prior to core drilling.
- Perform core drilling and other geotechnical investigations:
  - 1. Initial Site Evaluation:

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- a. 1 boring per acre in a uniform grid pattern
2. Project-Specific Evaluation:
  - a. Project Specific: As instructed by Project Architect and Project Structural Engineer through Jefferson County School, District R-1 Project Manager.
  - b. 1 boring per 10,000 - 20,000 gsf of building footprint
  - c. 1 boring per 1500 - 2000 square yards of pavement
3. Exploratory pits and trenches within the Jefferson County geologic "red zone" qualify as additional services beyond the scope of this section.
4. Infill cores and pits immediately after inspection and acceptance by Jefferson County School District, R-1.
5. Perform laboratory analysis of on-site soils and structural fill proposed to be imported to the site
6. Electronic, graphic, and written submittals according to the following outline:
  - Geotechnical Report
    1. Title Page
    2. Table of Contents
    3. Narrative
      - a. Executive summary statement
      - b. Overview, Scope
      - c. Proposed construction
      - d. Surface conditions
      - e. Geology and subsurface conditions
        - (1) Groundwater
        - (2) Bedrock
        - (3) Radon and other environmental conditions as requested or commissioned by Jefferson County School District, R-1
      - f. Conclusions and final recommendations for:
        - (1) Foundations
        - (2) Slab on grade
        - (3) Basement
        - (4) Subdrainage
        - (5) Flexible and Rigid Pavement Design
        - (6) Grading and drainage
        - (7) Landscaping
        - (8) Excavation and Compaction
        - (9) Cement type and Concrete mix design
        - (10) Construction details
        - (11) Retaining walls
        - (12) Notes, other
    4. Required Graphics
      - a. Legend
      - b. Site location map
      - c. Location of exploratory borings and test pits
      - d. Log of each exploratory boring with graphic symbols of soils at each depth
      - e. Swell Consolidation test result graphs
      - f. Spreadsheet log summary of laboratory test results

**Jefferson County School District, R-1 TECHNICAL GUIDELINES 2022  
Consultant Guidelines**

5. Optional and Supplemental Information
  - a. Sites in the Jefferson County 'Red Zone' may require supplemental information such as bedrock topography.
  - b. Gradation curves
  - c. Photographs
  - d. Geologic cross section(s) of the site
- Deliverables
  1. See Section CG 005 for format requirements.
  2. Report and graphics in index linked Adobe.pdf file
  3. Report in hard copy.

END SECTION CG 008

**CG 009 Site Master Plan - August 2015**

- Professional design services may be commissioned separately and in advance of, or in conjunction with, major site redevelopment projects.
  1. Depending upon the availability of capital resources, a funded design/construction site redevelopment project may follow the final Site Master Plan submittal, though it is not guaranteed.
- Scope of Professional Services
  1. Review historic documentation available from Jefferson County School District, R-1 including but not limited to:
    - a. Most recent site survey
    - b. Geotechnical report(s)
    - c. Archived drawings
    - d. Preliminary project scope statements
  2. Inspect the site with School District staff
  3. Perform supplemental site inspections as required
  4. Meet periodically with School District staff to "brainstorm" project overview, problems, requirements, possibilities, alternatives, approaches, proposed solutions, advantages, disadvantages, costs, schedules, etc.
  5. Develop no fewer than 2 site redevelopment concept plans
  6. Develop a single final recommended Site Master Plan
- Site Master Plan
  1. Narrative
    - a. Executive Summary, as appropriate.
    - b. Introduction / Background / History
    - c. Problem statement(s)
    - d. Meeting notes and chronology
    - e. Proposed options and resolutions to constraints and deficiencies identified in the site evaluation, with explanations of any proposed deviations from School District standards
    - f. Other recommendations (i.e. acquisition of additional parcels)
    - g. Conclusions
    - h. Final recommended Site Master Plan
  2. General Site Information

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- a. Location to student population
- b. Size, shape, layout, function, efficiency, general usability
- c. Gross and net acreages
- d. Geotechnical considerations and constraints
- e. Natural and legal property boundaries
- f. Easements, setbacks and their implications
- g. Adjacent land uses, zoning, development and their implications
- h. Possibilities for joint use with municipality / parks / recreation
3. Topography
  - a. Relative elevations of site components
4. Site efficiency, retaining structures, impediments
5. Drainage
  - a. Roof drainage
  - b. Storm drainage
  - c. On and off site retention/detention
  - d. Erosion control
6. Safety
  - a. Traffic (service vehicle, bus, automobile, bicycle, and pedestrian)
  - b. Hazards (waterway, ice buildup, embankment, highway, adjacent land use, etc.)
  - c. Fire hydrant locations
  - d. Fire lanes and emergency vehicle access/turnaround clearances
  - e. Visual supervision
7. Condition Analysis
  - a. Landscaping, grass, trees, other natural vegetation
  - b. Irrigation system
  - c. Pavement and recreational surfaces
  - d. Fencing
  - e. Fixed play and athletic equipment
  - f. Site furnishings
  - g. Signage
8. Compare current Jefferson County School District, R-1 Site Standards with existing site conditions.
  - a. Matrix format is preferred
9. Code and regulation analysis
  - a. Accessibility; identify ADA non-compliance
  - b. Steps, ramps, guardrails, handrails
  - c. Storm drainage
10. Environmental issues
  - a. Wetlands
  - b. Orientation /solar exposure / microclimate
  - c. Wind
  - d. Snow management / removal / stockpiling
  - e. View
11. Site Redevelopment Concept Plans
  - a. Develop no fewer than two (2) Site redevelopment concept plans with brief explanatory text evaluating the advantages and disadvantages of each.

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**Consultant Guidelines**

12. Site Master Plan
  - a. Develop a final recommended Site Master Plan from the concept plans
  - b. Recommend phased implementation in coordination with the District Project Manager
13. Construction Cost Analysis
  - a. Total project cost estimates for each phase or design option
  - b. Preparatory costs such as demolition, environmental mitigation
  - c. On and off site development costs
  - d. Components itemized to CSI "Level 2" detail
14. Coordination summary addressing the following:
  - a. Scheduling / sequencing issues
  - b. List of project-applicable utilities and contacts
  - c. List of project-applicable regulatory entities
  - d. List of non-regulatory coordinating entities such as Fire Department and Parks District
  - e. Unresolved issues
  - f. Other coordination issues
- Deliverables
  1. See Section CG 005CG 005 for format requirements
  2. Report in index linked Adobe.pdf file
  3. Report in hardcopy
  4. CAD file of large scale drawings and graphics
  5. Color presentation board of Final Site Master Plan
  6. 11 x 17 inch hardcopy color reductions of presentation board

END SECTION CG 009

**CG010 Pre-Design or Building/Facility Master Plan - August 2015**

- Pre-design professional design services such as site selection, facility analysis, concept plans and architectural programming are usually required in advance of large or complex projects.
- May be combined with CG 009 – Site Master Plan if project includes both site and building master planning
- Pre-design professional design services may be included as an additional professional service for a funded project or commissioned separately to establish the scope and budget for a future project.
- Depending upon the availability of capital resources, a funded design/ construction project may follow pre-design services though it is not guaranteed.
- Scope of Professional Services
  1. Review historic documentation available from Jefferson County School District, R-1 including but not limited to:
    - a. Archived drawings
    - b. Project manuals
    - c. Reports
    - d. Correspondence

**Jefferson County School District, R-1 TECHNICAL GUIDELINES 2022**  
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- e. Work orders
- f. Estimates
- g. Project scope statements
- 2. On-site inspection with School District staff including but not limited to:
  - a. Prime Consultant
  - b. Structural Consultant
  - c. Mechanical Consultant
  - d. Electrical Consultant
  - e. Other Consultants/Specialists as approved
  - f. Facility Planning
  - g. Construction Management
  - h. Facilities Services
  - i. Environmental Services
  - j. Facility representatives
- 3. Mandatory DVD of interior and exterior areas affected by proposed construction
  - a. Provides documentation of existing conditions should any questions or claims arise.
- 4. Additional on-site inspections as required to address report requirements.
- 5. Meet with School District staff and other individuals listed above to "brainstorm" project scope and budget, overview, problems, requirements, possibilities, solutions, alternatives, approaches, advantages, disadvantages, schedules, etc. and lay the groundwork for an eventual single schematic design proposal.
- Content
  - 1. Compare current Jefferson County School District, R-1 Educational Specifications (program requirements) to existing building and site conditions.
    - a. Matrix format is preferred
  - 2. Site Evaluation
    - a. Geotechnical
    - b. Storm drainage
    - c. Circulation/parking
    - d. Utilities
  - 3. Architectural Evaluation
    - a. Building envelope, including roof, insulation
    - b. Building structure
    - c. Building interior, finishes, amenities
  - 4. Structural Evaluation
    - a. Foundation
    - b. Wall structure
    - c. Floor framing
    - d. Roof framing
  - 5. Mechanical Evaluation
    - a. HVAC
    - b. Temperature Controls
    - c. Plumbing
    - d. Special systems (e.g. fire protection, Science Lab piping)
  - 6. Electrical Evaluation

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- a. Power Distribution
- b. Lighting
- c. Fire and Security Detection/Alarm
- d. Infrastructure Systems
7. Regulatory Issues
  - a. Building codes
  - b. Accessibility
  - c. Environmental compliance statement
  - d. Stormwater compliance
  - e. Other applicable codes and regulations
8. Narrative
  - a. Problem statement(s) and proposals encompassing items listed in the Facility Evaluation above, with explanations of any proposed deviations from School District standards.
  - b. Meeting notes and chronology
  - c. Summary of alternative schemes and systems investigated, with pros and cons of various alternative designs.
  - d. Analysis of renovation / addition vs. replacement
  - e. Recommendations and concluding statement of project scope, direction, and feasibility.
9. Construction Cost Analysis
  - a. Detailed estimate in CSI format with a value corresponding to each and every Division applicable, including:
    - (1) Preparatory costs such as demolition, environmental
    - (2) On and off site infrastructure development costs
    - (3) Costs of components, systems or requirements unique to the facility or project.
10. Coordination summary addressing the following:
  - a. Scheduling / sequencing issues
  - b. Coordination issues
  - c. Unresolved issues
  - d. List of project-applicable utilities and contacts
  - e. List of project-applicable regulatory entities
  - f. List of non-regulatory coordinating entities such as Fire Department.
11. Conceptual site and building plans and sections as required to support the narrative
- Deliverables
  1. See Section CG 005CG 005 for format requirements
  2. Report in index linked and searchable Adobe.pdf file
  3. Report in hardcopy quantity per Owner/Consultant Agreement or District Project Manager
  4. CAD file of all drawings and graphics
  5. Hardcopy plots of large scale drawings and graphics
  6. May be combined with deliverables in CG 009 as approved by the District's Project Manager

END SECTION CG 010

CG011 Schematic Design – August 2021

- Schematic Design professional design services are outlined in the standard Jefferson County School District, R-1 Consultant Agreement.
  1. The SD submittal should document:
    - a. Basic design decisions including materials, products, and systems.
    - b. Functional relationships of site and building spaces, circulation, and systems.
    - c. Conceptual appearance and context with existing site, neighborhood, and existing construction
    - d. Engineering concepts
- Scope of Professional Services
  1. Review historic documentation available from Jefferson County School District, R-1 including but not limited to:
    - a. Pre Design Report
    - b. Archived drawings
    - c. Project manuals
    - d. Correspondence
    - e. Work orders
    - f. Estimates
    - g. Project scope statements
    - h. Other
  2. On-site inspection with School District staff including but not limited to:
    - a. Prime Consultant
    - b. Structural Consultant
    - c. Mechanical Consultant
    - d. Electrical Consultant
    - e. Other Consultants/Specialists as approved
    - f. District Project Manager
    - g. Facilities Services
    - h. Environmental Services
    - i. Facility representatives
  3. Additional on-site inspections and evaluations as required to produce a meaningful and relevant Schematic Design.
    - a. Should include verification of above ceiling and other non-visible conditions
  4. Meetings with School District staff and Design Advisory Group (DAG)
- Content
  1. Narrative
    - a. Problem statement(s) or, if applicable, items listed in the Pre-Design Report
    - b. Design Parameters & Reference Data (codes, design criteria, geotechnical, survey, etc.)
    - c. Statements of scope of work, existing conditions, design criteria.
    - d. Initial coordination of potential furniture and staff moves as a result of construction.
    - e. Statement of program compliance with list of, and justifications for, proposed deviations from District Technical Guidelines and Educational Specifications.



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- f. Meeting notes and chronology
  - g. Summary of alternative schemes and systems investigated with summary of pros and cons of various alternative designs
  - h. Analysis of renovation / addition vs. replacement is required for work in existing buildings.
  - i. Conclusions and recommendations regarding project scope and direction.
2. Site Report:
- a. Statement of scope of work
  - b. Existing conditions
  - c. Demolition
  - d. Program compliance
  - e. Design criteria
  - f. Area/Acreage Analysis
    - (1) Tabulate proposed design with Educational Specification standards (and existing when applicable).
    - (2) Indicate approximate areas of each space on Schematic Design (SD) plan(s).
  - g. Utilities availability/capacity statement
  - h. Geotechnical
  - i. Storm drainage and erosion control
  - j. Traffic / circulation
3. Architectural Report:
- a. Statement of scope of work
  - b. Existing conditions
  - c. Demolition
  - d. Program compliance
  - e. Design criteria
  - f. Identify proposed materials, products, and systems by CSI division
  - g. Tabulate proposed design with Educational Specification standards (and existing conditions, when applicable).
  - h. Indicate approximate areas of each space on Schematic Design (SD) plan(s).
  - i. Summary tabulation of new, addition, and remodel areas.
  - j. List of proposed deviations from Jefferson County School District, R-1 Technical Guidelines with justification for each.
    - (1) If there are none, so state.
4. Roofing Report:
- a. Statement of scope of work
  - b. Existing Conditions for all roof sections and major roof accessories, flashing, and coping
  - c. Demolition
  - d. Program Compliance
  - e. Design Criteria
  - f. Recommendations
5. Structural Report:
- a. Statement of scope of work
  - b. Existing conditions
  - c. Demolition

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- d. Program compliance
- e. Design criteria
- 6. HVAC Report
  - a. Statement of Scope of Project – a brief description of the entire project.
  - b. Statement of Scope of Work.
  - c. Description of existing systems(s) and major equipment.
  - d. Statement of Problems:
    - (1) Failed systems
    - (2) Age of equipment
    - (3) Inadequate capacities
    - (4) Other items of note
  - e. Utilities availability/capacity statement.
  - f. Design criteria and reference data (codes, design criteria, survey, etc.) for new systems.
  - g. Statement of program compliance and stated deviations, if any, from program.
  - h. List of proposed deviations from Jefferson County School District, R-1 Technical Guidelines with justification for each.
    - (1) If there are none, so state.
  - i. List of alternative system(s) complete with scope of work (including all affected disciplines), pros and cons of each and comparable estimates of construction costs. If a considered system is not viable, so state.
  - j. List and counts of the various types of equipment proposed that may potentially qualify for Xcel rebates.
  - k. Conclusions and recommendations for systems.
  - l. Code and regulation analysis addressing mechanical systems.
- 7. Temperature Control Report
  - a. Statement of Scope of Work
  - b. Description of existing system(s) and major equipment.
  - c. Statement of Problems:
    - (1) Failed systems
    - (2) Age of equipment
    - (3) Inadequate capacities
    - (4) Other items of note
  - d. List of proposed deviations from Jefferson County School District, R-1 Technical Guidelines with justification for each.
    - (1) If there are none, so state.
  - e. List of alternative system(s) complete with scope of work (including all affected disciplines), pros and cons of each and comparable estimates of construction costs.
    - (1) If a considered system is not viable, so state.
  - f. Conclusions and recommendations for systems.
- 8. Plumbing Report
  - a. Statement of Scope of Work.
  - b. Description of existing system(s) and major equipment.
  - c. Statement of Problems:
    - (1) Failed systems

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- (2) Age of equipment
  - (3) Inadequate capacities
  - (4) Other items of note
  - d. Utilities availability/capacity statement.
  - e. Design criteria & reference date (codes, design criteria, survey, etc.) for new systems
  - f. Statement of program compliance and stated deviations, if any, from program.
  - g. List of proposed deviations from Jefferson County School District, R-1 Technical Guidelines with justification for each. If there are none, so state.
  - h. List of alternative system(s) complete with scope of work (including all affected disciplines), pros and cons of each and comparable estimates of construction costs. If a considered system is not viable, so state.
  - i. Conclusions and recommendations for systems.
  - j. Code and regulation analysis
9. Electrical Report:
- a. Statement of scope of work
  - b. Existing conditions
  - c. Demolition
  - d. Program compliance
  - e. Design criteria.
  - f. Include:
    - (1) Service
    - (2) Distribution
    - (3) Lighting
    - (4) Telephone
    - (5) Communication
    - (6) Fire detection/alarm
    - (7) Security
    - (8) Special systems, such as card access and video surveillance
  - g. Existing and anticipated power distribution loads
  - h. Lighting levels and controls
  - i. Communication, detection, alarm systems, equipment, and level of coverage
  - j. Load assumptions
  - k. Illumination levels
  - l. Description of systems, existing, modified, new
    - (1) Scope
    - (2) Sizes
    - (3) Capacities
    - (4) Problems and issues both confirmed and potential.
      - (a) Identify by system and area served
  - m. Proposed system alternatives / Options
  - n. List and counts of the various types of equipment proposed that may potentially qualify for Xcel rebates.
  - o. List exceptions to the Technical Guidelines with justifications for each.
    - (1) If none so state.
10. Accessibility Report:

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- a. Statement of scope of work
  - b. Existing conditions
  - c. Design criteria.
11. Environmental Compliance Report:
- a. Statement of scope of work
  - b. Existing conditions
  - c. Design criteria.
12. Code and regulation analysis per Jefferson County School District, R-1 standard format
- a. Include supplemental statements addressing Mechanical and Electrical systems.
13. Construction cost analysis
- a. Unit cost per square foot method is acceptable with properly applied factors for complexity.
  - b. Minimum level of detail for site and architectural estimates: CSI Level 2 numbers and section titles
  - c. Minimum level of detail for mechanical estimates:
    - (1) HVAC
      - (a) Air systems
      - (b) Heating
      - (c) Cooling
      - (d) Specials (Kitchen, Laboratories, etc.)
      - (e) Temperature controls
    - (2) Plumbing
      - (a) Domestic water
      - (b) Drainage
      - (c) Specials (Fire protection, Kitchen, Laboratories, etc.)
14. Minimum level of detail for electrical estimates:
- a. Power Distribution
    - (1) Service entrance
    - (2) Branch panel
  - b. Lighting
  - c. Subsystem concepts for:
    - (1) Detection/alarm, fire
    - (2) Detection/alarm, security
    - (3) Telephone, paging
    - (4) Data
    - (5) Video
  - d. Factors, adjustments, and special considerations
    - (1) Preparatory costs such as demolition, environmental
    - (2) On and off site development costs
15. Project development schedule
- a. Include projected review periods for Design Development and Construction Documents, release to bidders, bid opening, award, critical school calendar dates, construction start.
  - b. Construction phasing recommendations
16. Coordination summary addressing the following:

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- a. Temporary buildings
  - b. Pre-order
  - c. Work N.I.C. or by others
  - d. Schedule coordination
  - e. List of project-applicable utilities and contacts
  - f. List of project-applicable regulatory entities
  - g. List of non-regulatory coordinating entities such as Fire Department and Parks District
  - h. Summary of issues to be resolved
17. Facility Room Number Coordination. Coordinate with Archives Department for room number configurations following the guidelines below:
- a. Consider existing building being renumbered.
  - b. Every space must have a room number.
  - c. The main entry vestibule should be 100
  - d. Group physical spaces into suites and use a numerical designation.
  - e. Rooms within whole numbered rooms suites should be labeled A, B, C, etc.
  - f. Overall the numbering sequence should run clockwise in the building.
  - g. Corridors or hallways should be numbered independently of the room numbering sequence. For examples: CR 100 or similar, and should be logical in the sequence of space numbering.
  - h. Breakout Areas open to adjacent corridors may be labeled 100A.1 or 100A-1, or other, as desired, but should not be included in the sequence of enclosed rooms.
  - i. The second floor room numbering should start at 201 at the top of the of stairs. The Corridor should be CR-200. All other notes for the second floor numbering should follow as above for the first floor numbering.
  - j. Enclosed Egress Stairs should be labeled independently of the room numbering sequence, such as Stair A, Stair B, or similar. Stairs should be labeled the same on all floors where stairs are accessed.
  - k. Room accessed only from the exterior may be labeled independently of the rest of the building and do not need to be in numerical sequence.
  - l. Coordinate Scope of Work with the District Project Manager. Depending on the magnitude of re-numbering or re-naming, additional scope may be required including, but not limited to, Fire Alarm device re-programming, Building Automation Controls re-programming, Electrical Circuit re-labeling, Phone and Data re-programming, Changes in Signage and Fire Maps, etc.
18. Graphics
- a. Provide the minimum graphic information required to adequately convey the design intent (to both technical staff and non-technical reviewers) and the information listed in the narrative, including, but not limited to:
    - (1) Phasing
    - (2) Site development
    - (3) Floor plans
    - (4) Building elevations
    - (5) Building sections
    - (6) Perspectives or isometric views

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- b. HVAC floor and roof plans indicating locations of existing and proposed equipment:
  - (1) Primary air handling units
  - (2) Boilers, Pumps
  - (3) Chillers / towers / condensers, Pumps
  - (4) New and Existing – Large (>30 inch) duct routing, single line ductwork.
  - (5) New and Existing – Large (> 1 ½ inch) pipe routing
- c. HVAC/Plumbing Roof plan
- d. Temperature control zone map for cooling
- e. Plumbing floor plans fixtures indicating locations of existing and proposed fixtures and equipment
  - (1) New and Existing – Large (> 1 ½ inch) pipe routing
- f. f. Electrical building plan(s) indicating proposed locations of:
  - (1) Service entrance equipment and panels
  - (2) Main equipment
  - (3) Control panels for telephone, paging, fire, security, data, and video systems
- Deliverables
  - 1. See Section CG 005CG 005 for format requirements.
  - 2. Report in index linked Adobe.pdf file
  - 3. Report in hardcopy
  - 4. Electronic file of large scale drawings and graphics
  - 5. Hardcopy plots of large scale drawings and graphics

END SECTION CG 011

**CG012 Design Development - August 2021**

- Design Development professional design services are outlined in the standard Jefferson County School District, R-1 Consultant Agreement.
- Purposes of the Design Development submittal:
  - 1. Review in-progress (50% complete) construction (bid) drawings and specifications based upon decisions made at the Schematic Design Review
    - a. With special emphasis on mechanical and electrical.
  - 2. Confirm design approach and establish agreement on materials and systems.
  - 3. Confirm compliance with Educational Specifications, Technical Guidelines, project budget, and schedule.
- Scope of Professional Services
  - 1. Additional on-site inspections as required to produce a meaningful and relevant Design Development.
  - 2. Additional Meetings with School District staff and Design Advisory Group (DAG)
  - 3. Electronic, graphic, and written submittals sufficient to communicate the design intent primarily to technical staff.
  - 4. Confirm Room Numbering concepts with District Project Manager and Planning & Property.
  - 5. Consult with the District Archivist, through the District Project Manager, to ensure the most recent version of the District's Existing Facility Floor Plans and Room

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Numbering is used in the Design Documents. The room numbering provided on these documents shall not be changed by the Consultant without coordination and confirmation from the District Archivist.

6. Request from the District Project Manager an Archives Code to utilize during Close-out of the Project (Refer to CG018, 4<sup>th</sup> bullet point)
- Content
  1. General Drawings
  2. Hazmat Drawings
  3. Survey Drawings
    - a. Property lines, setbacks, rights of way, easements
  4. Civil Drawings
    - a. Demolition plans as appropriate
    - b. Storm drainage, erosion control
    - c. Site utilities
    - d. Fire hydrants and fire lines
    - e. Roads
  5. Landscape Drawings
    - a. Demolition plans as appropriate
    - b. Landscaping
    - c. Irrigation System
    - d. Site lighting
    - e. Pavement
    - f. Existing trees/landscaping to remain or to be removed
    - g. Dumpster locations
    - h. Temporary classroom buildings; both existing and proposed locations.
    - i. Area/acreage of programmed improvements
    - j. Construction contract limits, access, and staging areas
  6. Structural plans
    - a. Demolition plans as appropriate
    - b. Foundation
    - c. Floor
    - d. Roof
  7. Architectural Drawings
    - a. Floor plans
      - (1) Building Code Plan
      - (2) Demolition plans as appropriate
      - (3) Partition types, locations, acoustical ratings
      - (4) Built-in and permanently attached items (Divisions 10, 11, 12)
      - (5) Prototypical furniture and equipment layouts
      - (6) Indicate approximate areas and ceiling heights of each programmed space, including non-assignable support spaces.
      - (7) Indicate utility chases, shafts.
    - b. Elevations
      - (1) Exterior
      - (2) Interior (typical or critical)
      - (3) Casework

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- c. Sections
  - (1) Building
  - (2) Wall/floor/roof
  - (3) Stair/ramp
- d. Equipment and furnishing layouts
- e. Roof plans
- f. Perspective drawing, sketch, or rendering
- 8. Mechanical (HVAC, Temperature Control and Plumbing) drawings
  - a. All legends and abbreviations on the first drawing
  - b. Coordinate with Kitchen Consultants and others to confirm air exchanges, ventilation, and equipment heat gain parameters.
  - c. HVAC
    - (1) Demolition plans as appropriate.
      - (a) Identify (with sizes) specific equipment, ductwork, and large (>1 ½ inch) piping, and all system elements to be removed and distinguish it from the equipment ductwork, and piping in the demolition area which is to remain undisturbed
    - (2) New Construction plans shall include:
      - (a) Air handling equipment and ductwork larger than 30”
      - (b) Fire/smoke dampers
      - (c) Heating, cooling condenser, refrigerant piping larger than 1 ¼”
      - (d) In-duct coils
      - (e) Locations of intakes and discharges
      - (f) Diagrams of air and water systems
      - (g) All equipment schedules with preliminary data filled in
      - (h) HVAC Systems/Plumbing roof plan
    - (3) If chillers are part of the work, include manufacturer’s installation instructions regarding required clearances. Identify required airflow to the chiller on the mechanical drawings and provide required dimensions on the architectural or civil drawings.
    - (4) If rooftop or other outdoor HVAC equipment is part of the work, include manufacturer’s installation instructions regarding required clearances. Identify required airflow to the chiller on the mechanical drawings and provide required dimensions on the architectural or roofing drawings.
- 9. Fire suppression plans
- 10. Plumbing
  - a. Demolition plans as appropriate.
    - (1) Identify (with sizes) equipment and piping.
  - b. New construction plans
    - (1) Location of fixtures and major equipment
    - (2) Water, soil, and drain mains
    - (3) Plumbing Isometrics
    - (4) Schedules of equipment
    - (5) Details of major equipment
- 11. Temperature Controls
  - a. Heating Water and Chilled Water Plants Piping and Control Schematics.



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- b. Roof Top Units (Air Handling Equipment) Piping and Control Schematics
  - c. Schematics shall be per Jefferson County School District R-1 Standard Drawings.
  - d. Temperature control zone map for cooling
12. Electrical Drawings
- a. Demolition plans as appropriate
  - b. Power Distribution one line diagram
    - (1) Feeder
    - (2) Short circuit
    - (3) Equipment size and capacity
    - (4) Preliminary service load calculation with possible load shedding
  - c. Electrical floor plans
    - (1) Panel, switchgear, transformer locations
    - (2) Receptacle locations
    - (3) Mechanical and other powered equipment locations
  - d. Lighting Floor Plan(s)
    - (1) Typical fixture and switch layout
    - (2) Design illumination levels
  - e. Fire and Security Alarm
    - (1) Riser
    - (2) Floor plans with device location. Coordinate with the District Archivist, through the District Project Manager, to ensure the most recent version of the Facility Floor Plans and Room Numbering is used. The room numbering shall be used on all Fire and Security Documents.
  - f. Paging and Telephone
    - (1) Riser
    - (2) Floor plans with device locations
  - g. Video and data
    - (1) Riser
    - (2) Floor plans with device locations, including electrical outlets.
13. Schedules:
- a. Complete schedules with draft information filled in for typical and types of applications.
    - (1) Door, Window
    - (2) Hardware Schedule (complete with keyway, finish, and manufacturer)
    - (3) Finishes
14. Project Manual / Specifications
- a. Complete, reviewed, and relevant (edited) working draft of all applicable specification sections in Divisions 02-33 numbered to correspond directly with Technical Guidelines.
    - (1) Product data sheets and other graphic material are preferred (required for luminaires)
    - (2) Identify proposed submittal and warranty requirements for each section.
    - (3) Identify exceptions to the Technical Guidelines and Educational Specifications with justifications for each.
  - b. Working draft of contract supplements and modifications
  - c. Division 01 outline

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- d. Proposed Price and Payment Items
  - (1) Allowances
  - (2) Alternates
  - (3) Unit Prices
- 15. Construction cost analysis by CSI Section
  - a. Mechanical and Electrical cost analysis should expand and refine SD estimate to include detailed costs for equipment and systems.
  - b. Subtotal estimates for each proposed bid alternate
- 16. Project development schedule
  - a. Include projected review period for Construction Documents, permits, approvals, release to bidders, bid opening, award, critical school calendar dates, construction start, phasing.
  - b. Construction phasing recommendations
- 17. Coordination summary addressing the following:
  - a. Temporary buildings
  - b. Pre-order
  - c. Work N.I.C. or by others, including pre-purchased Systems/Components and environmental compliance work
  - d. Coordination of potential furniture and staff moves and relocations as a result of construction.
  - e. Utility contacts and temporary utility requirements for construction, including preliminary authorizations and approvals.
  - f. Updated list of project-applicable regulatory requirements.
  - g. Updated list of non-regulatory coordinating entities such as Fire Department and Parks District
  - h. Special bidding requirements (liquidated damages, allowances, unit prices, separate contracts)
  - i. Proposed alternates
  - j. Summary of unresolved issues
  - k. Potential Xcel Energy rebate items
- 18. Design Development Report
  - a. Summary of revisions implemented since Schematic Design submittal
  - b. Expand and refine all elements of the written Schematic Design submittal
  - c. Updated statements of scope of work, existing conditions, design criteria, program compliance with list and justifications proposed deviations from School District standards.
    - (1) Site (Civil and Landscape)
    - (2) Structural
    - (3) Architectural
      - (a) Summary tabulation of new, addition, and remodel areas
    - (4) Accessibility, Accessible route
    - (5) Structural
    - (6) HVAC Report
      - (a) Summary of revisions implemented since Schematic Design submittal
      - (b) Update, expand, and refine all elements of the SD report.
      - (c) System and subsystem descriptions

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- (d) Heating and cooling calculation summaries
- (e) Product data sheets and other graphic material for major HVAC equipment
- (7) Temperature Control Report
  - (a) Summary of revisions implemented since Schematic Design submittal
  - (b) Update, expand and refine all elements of the SD report.
- (8) Plumbing Report
  - (a) Summary of revisions implemented since Schematic Design submittal
  - (b) Update, expand, and refine all elements of the SD report.
  - (c) Plumbing fixture count
  - (d) Design calculations for water service sizing
  - (e) Product data sheets and other graphic material for major Plumbing equipment
- (9) Electrical
  - (a) Point by point illumination calculations on 4 x 4 grid for “typical” spaces
- (10) Infrastructure Systems
- (11) Detection and Alarm
- (12) Fire Suppression
- (13) Environmental compliance
- Deliverables
  - 1. See Section CG 005 for format requirements.
  - 2. Report in index linked Adobe.pdf file
  - 3. Report in hardcopy
  - 4. Electronic file of large scale drawings and graphics
  - 5. Hardcopy plots of large scale drawings and graphics
  - 6. District provide identification code on all documents.

END SECTION CG 012

**[CG013 Construction Documents and Bid Set - August 2021](#)**

- Construction Documents and Bid Set professional design services are outlined in the standard Jefferson County School District, R-1 Consultant Agreement.
- Construction Documents and Bid Set have three distinct generations:
  - 1. Construction Document review submittal must be 100% complete, ready for immediate release to bidders.
  - 2. Bid Set issued for pricing.
  - 3. Contract Award Set includes addenda and accepted alternates.
- See Division 01 for As-Constructed Record Documents
- Coordination
  - 1. The prime consultant is responsible for assuring that sub-consultants are thoroughly familiar with provisions and requirements of:
    - a. Consultant contract
    - b. General contract
    - c. Consultant Guidelines
    - d. Technical Guidelines, including:

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- (1) Consultant Guidelines
- (2) Division 00
- (3) Division 01
2. Coordinate prime- and sub-consultant drawings to avoid conflicts in scale, appearance, orientation, symbols, abbreviations, etc.
3. Coordinate prime- and sub-consultant specifications to avoid conflicts with the Construction Contract, General Conditions, Supplementary Conditions, Division 01, and other specification sections.
4. Coordinate the following well in advance of the CD review submittal:
  - a. Drawings and Specifications
  - b. Roof Plan / Reflected Ceiling Plan / Architectural / Structural / Plumbing / Mechanical/Electrical
  - c. Easements, site utilities, site improvements
  - d. Utility profiles (depths) and valves/access points
  - e. Schedules/Plans/Sections/Details
  - f. Stormwater regulatory documents, reviews, and approvals
  - g. Water/sanitation district reviews and approvals
  - h. Traffic lights/crosswalks with traffic jurisdiction agency before CD submittal.
  - i. Xcel Energy or IREA re: site utilities, pads, and enclosures
  - j. Data drops for Temperature Controls
  - k. Food Service design and coordination
  - l. Items listed in Section 01 31 00
5. In the absence of other information, standards of the following organizations apply:
  - a. Construction Specifications Institute (CSI) Project Resource Manual, current edition.
  - b. National Institute of Building Sciences (NIBS) Uniform Drawing System (UDS)
- Quality Assurance
  1. Level of Detail in Bid and Construction Documents shall be of sufficient detail to exhibit compliance with applicable codes, standards, and these Technical Guidelines and relieve (not impose upon) the installing tradesperson or builder from making design decisions.
  2. All construction documents released for bidding or pricing purposes shall be complete and shall be prepared to the highest ability of the design team. All documents shall be thoroughly coordinated and shall be accurate within what would generally and normally be expected of any professional design team working on similar type projects and under similar conditions in the design industry.
  3. Each and every Bid/Construction Documents component must have identical identification, titles, and dates.
    - a. Repeat basic project information on each volume of multiple volume sets of documents.
  4. Limit information on drawings to:
    - a. Size
    - b. Form
    - c. Quantity
    - d. Relationships
    - e. Generic type

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- f. Graphic representations of materials.
- 5. Limit information in specifications to:
  - a. Procedures
  - b. Qualitative requirements for products, materials, and workmanship.
- 6. Comply with NIBS Uniform Drawing System (UDS) to the greatest extent possible.
- 7. See Construction Specifications Institute Project Resource Manual.
  - a. "Say it once...Say it correctly...Place it in the proper location."
- 8. The following phrases and abbreviations are prohibited on any construction document without the written consent of Jefferson County School District R-1, District Project Manager:
  - a. "By Owner"
  - b. "By Others"
  - c. "Not In Contract (N.I.C.)"
  - d. "Not Included"
- 9. Addenda issued during bidding or pricing phases
  - a. Unusually large, high quantities of, or highly complex, addenda releases will be evaluated by the District Project Manager to confirm completeness of the bid documents and may be indications of inadequate or deficient documents.
    - (1) The District Project Manager will review the documents for inadequacy or incompleteness in detail and coordination and may extend the bid phase to ensure documents are complete and ready for bidding and that bidders have an opportunity to thoroughly understand and incorporate the addenda in their bids.
    - (2) Those documents determined to be incomplete in any way prior to bid release and that may be deleterious to the District receiving responsive and complete bids will be further evaluated during the construction phase to determine if incomplete documents are responsible for significant change orders not due to unforeseen conditions or Owner-directed changes.
- Content
  - 1. Construction Document Report
    - a. Summary of revisions implemented since Design Development Report
    - b. Summary tabulation of new, addition, and remodel areas.
    - c. Division 23 final calculation summaries (HVAC)
    - d. Identify all exceptions to the Technical Guidelines and Educational Specifications along with justification for each exception.
  - 2. Final, complete, and detailed construction cost analysis
    - a. Detailed estimate in CSI format with a value corresponding to each and every specification section applicable to the project
      - (1) Subtotals by Division
    - b. Unit costs summaries
      - (1) Dollars per square foot for entire project, site, and systems
      - (2) Dollars per acre for civil/ sitework / pavement
    - c. General Contractor Overhead and profit
    - d. Bid Alternates per Technical Guidelines 01 23 00.
    - e. Recommended bid and construction contingencies
  - 3. Construction schedule / phasing

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4. Coordination summary addressing the following:
  - a. Summary of revisions implemented since Design Development
  - b. Updated statements of:
    - (1) Scope of work
    - (2) Existing conditions
    - (3) Design criteria
    - (4) Program compliance with list and justifications proposed deviations from Jefferson County School District, R-1 standards.
  - c. Work not in contract or by others, including pre-purchased Systems/Components and environmental compliance work
  - d. Statement summarizing the information included in the documents for scopes of work and coordination of furniture and staff moves as a result of construction.
  - e. Utility contacts and temporary utility requirements for construction, including preliminary authorizations and approvals.
  - f. Updated list of project-applicable regulatory requirements.
  - g. Updated list of non-regulatory coordinating entities such as Fire Department and Parks District
  - h. Final load calculations
    - (1) Mechanical
    - (2) Electrical (normal, emergency, and illumination)
  - i. Environmental compliance statement
  - j. Temporary buildings
  - k. Pre-order
  - l. Summary of unresolved issues
  - m. Restrictions on distribution of bid sets
5. Project Manual / Specifications
  - a. Division 00 Introductory Requirements, Bidding Requirements, Contracting Requirements, Contract Forms, and Conditions of the Contract must be complete, accurate, pertinent to the specific project, and fully coordinated with other specifications and drawings.
    - (1) Jefferson County School District, R-1 standard contract forms may not be modified under any circumstances.
      - (a) Supplemental documents, modifications, and altered language require approval by the District Project Manager.
    - (2) Clearly identify special bidding requirements such as liquidated damages, allowances, unit prices, separate contracts.
    - (3) Forms and formats contained in this Technical Guideline are examples of preferred content, format, and language. Editing of these documents is required in all cases to accommodate specific project requirements.
  - b. Division 01 and Supplemental General Conditions must be fully coordinated with General Conditions prior to Construction Document review submittal.
    - (1) Price and Payment issues
      - (a) Allowances
      - (b) Alternates
      - (c) Unit Prices

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- c. Divisions 02 - 33 must be complete, reviewed, coordinated, cross-checked, and project-relevant.
  - (1) A short, comprehensible, enforceable spec is preferred over a lengthy tome no one will ever read
- d. Submit catalogue cut sheets for lighting fixtures and major mechanical equipment and other sections as appropriate or requested.
  - (1) Cut sheets shall clearly identify the product being specified if there are more than one products shown per sheet
- 6. General Drawings (G)
  - a. Project Title and Index Sheet(s)
    - (1) Project identification
      - (a) Project Title as assigned by Jefferson County School District R-1
      - (b) Project Number as assigned by Jefferson County School District R-1
    - (2) Submittal identification (CD review or bid set number)
    - (3) Date(s)
    - (4) Consultant firm name, address, phone, registration number
    - (5) Sub-consultant name, address, phone, registration number
    - (6) Drawing index
  - b. Location (Vicinity) Map with north arrow
  - c. Symbols, abbreviations legends
  - d. General notes
  - e. Phased construction/prototype/alternates information
  - f. Gross/net areas
  - g. Design parameters/loads
  - h. Reference data (codes, design criteria, geotechnical, survey, etc.)
  - i. Archival Drawing Code applied to each drawing.
- 7. Hazardous Materials Drawings (H)
  - a. Typically bid as a separate contract and excluded from General Construction drawings.
- 8. Survey Drawings (V)
- 9. Civil Drawings ( C)
  - a. Site plan
    - (1) Property lines
    - (2) Benchmark(s)
    - (3) Site data and notes
    - (4) Easements, Rights of way
      - (a) Utility easements
      - (b) Construction easements
      - (c) Drainage / slope easements
    - (5) Site access, contract limits
      - (a) Designate (fenced) area for staging, field office, stockpiled material
    - (6) Pavement
  - b. Grading Plan
    - (1) Storm Drainage
      - (a) Plan and Profiles

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- (b) Storm Water Management Plans (SWMP), including temporary construction
  - c. Composite site utility plan
    - (1) Consolidate site utility information regarding utility service, lines, control points, access points, meters, and connections to building for:
      - (a) Water
      - (b) Fire Hydrant
      - (c) Sanitary sewer
      - (d) Storm sewer
      - (e) Gas
      - (f) Telephone
      - (g) Electrical
      - (h) CATV
      - (i) Road / Highway / Traffic Control
      - (j) Plan / Profile
      - (k) Horizontal (& Vertical) Control
      - (l) Details
10. Landscape Drawings (L)
- a. Site Demolition Plans
  - b. Landscape Plans
    - (1) Temporary classroom buildings or area
    - (2) Existing trees/landscaping to remain or be moved
    - (3) Dumpster locations
    - (4) Service access
    - (5) Emergency access, and pavement configuration per fire department
    - (6) Emergency egress
  - c. Irrigation plans
  - d. Details
11. Structural Drawings (S)
- a. Foundation System
  - b. Floor or Roof Framing System
  - c. Structural Details
12. Architectural Drawings (A)
- a. Architectural Cover Sheet
  - b. Building Code Plan
    - (1) Building Code Analysis
    - (2) Construction types
    - (3) Area/occupancy separations
    - (4) Rated/unrated construction
    - (5) Occupant load calculations
    - (6) Egress routes, maximum distances
    - (7) Fire suppression
  - c. Demolition Plans
  - d. Floor Plans
  - e. Roof Plans
  - f. Building Elevations



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- g. Building Sections
  - h. Wall, Stair, Partial, and other architectural sections
  - i. Windows
  - j. Doors/Frames
    - (1) Identify active leaf, glazing, label
  - k. Other / Miscellaneous
13. Interiors Drawings (I)
- a. Reflected Ceiling Plans
    - (1) Complete integrated composite of visible elements including:
      - (a) Fire Protection
      - (b) HVAC
      - (c) Lighting
      - (d) Communications.
  - b. Detail Plans
    - (1) Furniture layout / Equipment Plans
      - (a) Provide exiting diagram at assembly areas with movable seating.
  - c. Interior Elevations
14. Equipment Drawings (Q)
- a. Composite (Divisions 21-28) detail equipment plans, partial plans, wall elevations, and/or 3-D Building Information Model (BIM) are required for boiler rooms, mechanical/electrical equipment rooms, and communications equipment rooms.
15. Fire Protection Drawings (F)
- a. Fire Protection Plans necessary to define scope and appropriate details
16. Plumbing Drawings (P)
- a. Demolition – Full floor plans of areas with equipment to be removed. Identify (with sizes) specific equipment and piping and all system elements to be removed. Distinguish it from the equipment and piping in the demolition area which is to remain undisturbed.
  - b. Plans
  - c. Details
  - d. Isometrics
    - (1) Domestic water
    - (2) Sanitary sewer
    - (3) Natural gas
  - e. Equipment Schedules
    - (1) Minimum information required.
      - (a) Provide all information necessary for full and complete identification of equipment required for the project.
      - (b) Locations on site or within the facility
17. Mechanical Drawings (M)
- a. Mechanical / HVAC/Temperature Control/Plumbing Title Sheet
    - (1) Abbreviations, legends, symbols
  - b. HVAC
    - (1) Demolition:
      - (a) Full floor plans of areas with equipment to be removed

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- (b) Identify (with sizes) specific equipment, ductwork, and piping and all system elements to be removed.
  - (c) Distinguish it from the equipment, ductwork, and piping in the demolition area which is to remain undisturbed.
  - (2) Complete airside subsystem with control sensors.
  - (3) Piping
  - (4) Mechanical equipment areas:
    - (a) ¼" = 1'-0" floor plans and elevations
  - (5) Details, elevations and sections
  - (6) Flow diagrams for air and water sub-systems with flow quantities
  - (7) Equipment Schedules
    - (a) Minimum information required.
      - (i) Provide all information necessary for full and complete identification of equipment required for the project.
      - (ii) Locations on site or within the facility
  - c. HVAC/Plumbing Roof Plan
    - (1) Roof details by Architect and shown on architectural drawings only
  - d. Temperature Control
    - (1) Complete final schematics
  - e. Chiller and DX enclosure dimensions and submittal(s) require written approval from the District's Energy Manager and District's Mechanical Commissioning Engineer prior to 95% CD documents being issued.
18. Electrical Drawings (E)
- a. Electrical Title Sheet
    - (1) Abbreviations, legend
  - b. Electrical Site Plan
  - c. Electrical Demolition Plan
  - d. Electrical Power Distribution Plans
  - e. Lighting Plans
    - (1) Special lighting (i.e. theatrical)
  - f. Electrical Equipment Areas:
    - (1) ¼" = 1'-0" floor plans and elevations
    - (2) Required for MDF, IDF and Communications Rooms
  - g. Electrical Riser / One Line Diagrams
    - (1) Power
  - h. Electrical Details, Miscellaneous
  - i. Infrastructure Systems and Special Systems Drawings
    - (1) Infrastructure Systems and Special Systems Site Plan(s)
    - (2) Fire detection / alarm
    - (3) Security
    - (4) Card Access / Video Surveillance
    - (5) Paging
    - (6) Public Address (P/A)
    - (7) Telephone
    - (8) Data
    - (9) Video

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19. Temperature Controls Drawings (TC)
  - a. Control/piping schematics for all mechanical systems and/or equipment. Format as defined by Jefferson County School District R-1 standard control/piping drawings.
  - b. Temperature controls schematic diagram showing each piece of controlled equipment with DDC in and out points for each.
    - (1) Room temperature-sensing elements
    - (2) Flow measuring stations
    - (3) Duct runs
    - (4) Water flow test stations
    - (5) Sequence of operation
    - (6) Network layout isometric
    - (7) Piping air system layout
  - c. Symbol/legend; schedule, cover, valve, damper, network layout, piping layout, boiler layout, chiller, AHU, MAU, UH/EF/CUH/UV with parts listing for each system described.
20. Resource Drawings (R )
21. Details
  - a. General
    - (1) Consultant option: locate details either on appropriate drawings or in the Project Manual.
      - (a) DO NOT use both options in a single project.
      - (b) Maintain sub-consultant format consistency.
22. Schedules
  - a. General
    - (1) Locate on or adjacent to appropriate drawing sheets for Divisions 02 – 14 work.
    - (2) Project Manual schedules are prohibited for Divisions 09, 13, 21, 22, 23, 25, 26, 27 and 28
    - (3) Structure schedules to permit post-award and post-construction entry of as-constructed record information.
  - b. Civil Schedules:
    - (1) No requirements
  - c. Landscape Schedules:
    - (1) No requirements
  - d. Architectural Schedules
    - (1) Finish Schedule
      - (a) Mark
      - (b) Name
      - (c) Floor
      - (d) Color/pattern
      - (e) Ceiling
      - (f) Walls
      - (g) Notes
      - (h) Blank for as-constructed records
    - (2) Door Schedule

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- (a) Mark
- (b) Location
- (c) Width
- (d) Height
- (e) Thickness
- (f) Elevation
- (g) Material
- (h) Finish
- (3) Frame Schedule
  - (a) Type
  - (b) Elevation
  - (c) Head, jamb, sill detail references
  - (d) Finish
- (4) Hardware Schedule
  - (a) Hinge type, number
  - (b) Lock/latch/panic hardware
  - (c) Deadbolt
  - (d) Flushbolt
  - (e) Push/pull
  - (f) Kickplate
  - (g) Threshold
  - (h) Weather-stripping
  - (i) Closer
  - (j) Stop
  - (k) Blank for as-constructed keyway
  - (l) Blank for as-constructed manufacturer
  - (m) Blank for as-constructed item
  - (n) Blank for as-constructed finish
- (5) Window Schedule
  - (a) Mark
  - (b) Type/designation
  - (c) Dimensions
  - (d) Head elevation
  - (e) Head, jamb, sill, mullion details
- e. Structural Schedules
  - (1) Footing / Foundation
  - (2) Columns
  - (3) Beams / Joists
- f. Mechanical Schedules shall include but not be limited to:
  - (1) Equipment Schedule
    - (a) Mark/symbol
    - (b) Location (Room number, corridor number, etc.)
    - (c) Description
    - (d) Manufacturer/model/number
    - (e) Provided by
    - (f) Installed by

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- (g) Connections by
- (h) Electrical voltage/phase
- (i) Capacities
- (j) Utility/fluid (number, sizes, pressure, temperature, etc.)
- (k) Notes
- (l) Blank for as-constructed manufacturer/model
- (2) Plumbing Schedules:
  - (a) Fixture and fitting schedules with blank for as-constructed data
- (3) Electrical Schedules:
  - (a) Panel Schedule with blank for as-constructed data
  - (b) Luminaire Schedule with blank for as-constructed data
  - (c) Equipment Schedule with blank for as-constructed data
  - (d) Locations (Room number, corridor number, etc.)
- Deliverables: CD Review(s)
  - 1. Project manual, report, and drawings in Adobe.pdf file
  - 2. Hardcopy report, project manual, drawings
  - 3. Electronic drawing files
  - 4. All components clearly labeled “Not For Construction”.
  - 5. See CG 005CG 005 for format requirements
- Deliverables: Bid Set
  - 1. Final Construction Drawings
  - 2. Final Project Manual
  - 3. Documents for release to Bidders and Plan Rooms
  - 4. Addenda as necessary
  - 5. Bid Tabulation
  - 6. Recommendation of Contract Award Letter
  - 7. See CG 005 for format requirements
- Bidding
  - 1. Consultants are responsible for:
    - a. Notification of prequalified bidders and subcontractors that documents are available
    - b. Confirmation that prequalified bidders are bidding the project
- Deliverables: Contract Award Set
  - 1. Construction Drawings
  - 2. Project Manuals
  - 3. CAD files of all bid documents released.
  - 4. Presentation boards are required for projects as identified by the District Project Manager.
  - 5. See CG 005 for format requirements
  - 6. CAD file(s) to the Archives department containing a simplified “clean” version of the overall facility floor plan displaying all changes to the facility.
    - a. This clean version shall include walls, doors, windows, columns, stairwells, elevators, permanent furniture (i.e. cabinetry, walk-in freezers, etc.).
    - b. CAD file must be purged from all unneeded layers, blocks, excess and overlapping line work, polylines, etc. CAD file shall not have any external references.

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- c. CAD file(s) is/are to be placed in a virtual location created for project at Design Development (Refer to CG018, 4<sup>th</sup> bullet point), folder “H. Floor Plan Composite”.
- d. This information is needed to start the process of updating the districts’ current facility floor plan inventory and is shared with emergency responders and various departments internally.
- Deliverables: Closeout
  1. See Division 01

END SECTION CG 013

**CG014 Retrofit Roofing - August 2015**

- In the absence of other information, standards of the following organizations apply:
  1. Roof Consultants Institute (RCI)
  2. National Roofing Contractors Association (NRCA)
- Coordinate roof drain discharge with plumbing and civil requirements of these Technical Guidelines.
- Scope of Professional Services
  1. Review historic documentation available from Jefferson County School District, R-1 including but not limited to:
    - a. Archived drawings
    - b. Project manuals
    - c. Reports
    - d. Correspondence
    - e. Work orders
    - f. Estimates
    - g. Project scope statements
  2. Meetings with School District staff
    - a. Prime Consultant
    - b. Structural Consultant
    - c. Other Consultants/Specialists as approved
    - d. District Project Manager
    - e. Facilities Services
    - f. Environmental Services
    - g. Facility representatives
  3. On-site physical inspection(s) of the existing roof with and without School District staff :
    - a. Survey roof elevations to establish positive drainage.
    - b. Structural Engineering to establish dead and live load capacities of roof structure
    - c. Non-intrusive moisture mapping
    - d. Destructive testing as required and approved by Jefferson County School District, R-1.
    - e. Photographs, sketches, and other media to document existing conditions
  4. Prepare and submit a written and graphic report according to the outline below
  5. Design Development Review Submittal

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6. Bid and Contract Documents Review Submittal
7. Bid and Contract Documents
8. Construction Contract Administration including Closeout
- Content
  1. Executive Summary
  2. Problem statement(s) and proposals encompassing items listed in the Roof Inspections above, with explanations of any proposed deviations from School District standards.
    - a. Membrane condition
    - b. Insulation
    - c. Structure
    - d. Drainage
  3. Summary of alternative schemes and systems investigated, with pros and cons of various alternative designs.
  4. Analysis of repair vs. replacement
  5. Recommendations and concluding statement of priorities, alternatives, recommendations for correction, project scope, direction, and feasibility.
  6. Effects of IECC on new insulation requirements, if relevant
  7. Meeting notes and chronology
  8. Graphics
    - a. Photographs
    - b. Moisture Map
    - c. Elevation Survey
    - d. Roof Plans, sections, details and other drawings as required to support the narrative.
  9. Construction Cost Analysis
  10. Coordination summary addressing the following:
    - a. Scheduling / sequencing issues
    - b. Coordination issues
    - c. Unresolved issues
    - d. Codes and regulations
- Deliverables
  1. Report: Per Consultant Guidelines for "Pre-Design" CG 009
  2. Other: Per Consultant Guidelines "Design Development" CG 011 and "Bid/Construction Documents" CG 012
  3. See CG 005 for format requirements

END SECTION CG 014

**CG015 Asbestos Abatement - August 2016**

- Coordinate asbestos abatement with current renovation or improvement project to minimize impact on asbestos containing materials.
- In the absence of other information, standards of the following organizations apply:
  1. Environmental Protection Agency
  2. Occupational Safety and Health Administration
  3. Colorado Department of Health

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- Scope of Professional Services
  1. Review historic documentation available from Jefferson County School District R-1 including but not limited to:
    - a. Archived drawings
    - b. AHERA Management Plan
    - c. SD Documents
    - d. DD Documents
  2. Meetings with school district staff
    - a. Prime Consultant
    - b. District Project Manager
    - c. Facilities Services
    - d. Environmental Services
    - e. Facility representatives
  3. On-site physical inspection(s) of the existing building with and without School District staff
    - a. Survey asbestos containing materials in building
  4. Prepare and submit a written and graphic report according to the requirements of this Section.
  5. Bid and Contract Documents Review Submittal
  6. Bid and Contract Documents
  7. Construction Contract Administration including Closeout.
  8. On site air quality, monitoring before, during, and after abatement activities.
  9. Visual inspections to confirm compliance with documents and regulations
  10. Daily log / checklist
  11. Close out report
- Report Contents
  1. Identification and quantification of all asbestos containing material impacted by renovation documents.
    - a. Area of building
    - b. Location of material
    - c. Scope of renovation work:
      - (1) Significance of impact
  2. Summary of alternatives investigated, with pros and cons of various alternative designs.
  3. Analysis of options: Complete removal vs. minimal encapsulation
  4. Recommendations and concluding statement of priorities:
    - a. Alternatives
    - b. Recommendations
    - c. Costs
    - d. Scheduling
    - e. Project scope
    - f. Direction
    - g. Feasibility.
  5. Meeting notes and chronology
  6. Graphics



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7. Construction Cost Analysis – including the scope of work for additional replacement/reconstruction which will be required by the abatement project so that the design team can estimate remodel work.
8. Coordination summary addressing the following:
  - a. Scheduling/sequencing issues
  - b. Coordination issues
  - c. Unresolved issues
  - d. Codes and regulations
- Deliverables
  1. Report and drawings in Adobe .pdf file
  2. Hardcopy report
  3. Hardcopy of drawings
  4. See Section CG 005 and CG18.9 for format requirements

END SECTION CG 015

**CG016 Construction Contract Administration - October 2010**

- Construction Contract Administration services are outlined in the standard Jefferson County School District, R-1 Consultant Agreement.
- The prime consultant is responsible for assuring that sub-consultants are thoroughly familiar with the Construction Contract Administration provisions and requirements of:
  1. Consultant contract
  2. Technical Guidelines, including Division 01
  3. Project Manual
- Scope of Professional Services
  1. Enforcement of Contract Documents
  2. Field Inspections
  3. Meetings
  4. Field Reports
  5. Administration of Payments to Contractor
  6. Submittal review and processing
  7. Coordination of Code and Regulatory permits and approvals
  8. Requests for Information or Clarification (RFI or RFC)
  9. Change Orders
  10. Field Directives and Supplemental Instructions
  11. As-Constructed Record information
  12. Statement of Asbestos Content
  13. Project Closeout, including As-constructed Record Documents
- Color / finish boards:
  1. Provide 3 boards within 60 days of award of construction contract

END SECTION CG016

**CG017 Post-Construction - October 2010**

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- Post-Construction professional services are outlined in the standard Jefferson County School District R-1 Consultant Agreement.
- The prime consultant is responsible for assuring that sub-consultants are thoroughly familiar with the Post-Construction Contract Administration provisions and requirements of:
  1. Consultant contract
  2. Technical Guidelines, including:
    - a. Consultant Guidelines
    - b. Division 00
    - c. Division 01
  3. Project Manual
- Scope of Professional Services
  1. Post Construction Field Inspections
  2. Post Construction Field Reports
  3. Warranty Administration
  4. Meetings as required
  5. Correspondence as required

END SECTION CG 017

**[CG018 Project Closeout Requirements – August 2022](#)**

- All final as-constructed changes/updates shall be submitted by the Consultant within 30 working days from the district's Project Acceptance date listed on the District's Letter of Acceptance. The District Project Manager shall confirm all known changes/updates have been completed and submit the complete Close-out Package to the Archives office as described below.
- District Project Manager is responsible to verify all close out documents are completed and submit to Archives. Archives will not accept documentation directly from the Consultant or Contractor.
- At the Design Development Phase the consultant shall request from the District Project Manager an Electronic close out package model to which consultant shall adhere to when submitting electronic data. Archives department will provide the Electronic close out package sample to District Project Manager. Archives will designate a virtual space in Google drive for the consultant to place all close out deliverables. Files shall be located in the appropriate folders; Consultant shall closely follow the Electronic close out model format. This will be the preferred close out documents delivery method. If this method cannot be followed, then section CG005 Electronic File Transfer applies.
- **Projects that are suspended and/or put on hold and/or cancelled by District.** Prime Consultant in coordination with District Project manager shall secure and archive any intellectual data valuable to the District. Deliverables shall adhere to all requirements within the Consultant Guidelines. Project documents will be assessed for completeness on a case-by-case bases depending on the nature of the document. Examples of this information (not a complete list) are the following documents:
  - a. Completed and verified Site surveys
  - b. Topographic plans

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- c. Completed and verified Studies and/or Reports
- d. Master plans
- e. Partial design documents
- All documents shall comply with CG005 Graphic Conventions
- Electronic files shall comply with CG005 formats.
  - A. Native format drawing files shall:
    - a. Be AutoCAD 2018 or higher version files.
    - b. Consist of one drawing per CAD file. No multi-layout files will be accepted.
    - c. Be named the same as the drawing number. Do not use a prefix with file name, such as the consultant's project number, etc.
    - d. Contain an Archives Code provided by the Archives department. Such code shall be requested by prime consultant at the Design Development phase of the project. Archives will produce the Archived Code and will forward to prime consultant along with instructions on how to implement. District Project Manager will be made aware of this step and the information provided.
    - e. Use Paper Space for title block and Model Space for project elements which shall be in 1:1 scale.
    - f. Always be submitted with all their respective external references, CTBs, STBs, images, special fonts, etc.
- "Record Document" or "Record Drawing" shall be notated on each drawing and on each project manual cover page.
  - A. Include the Record document date, which shall be the same on all documents.
  - B. Include Jeffco's project number on drawing title block so that it appears on all drawing sheets.
- Submit Microsoft Excel files for:
  - A. Mechanical Equipment and Plumbing Schedules
  - B. Electrical Equipment Schedules
- When providing the following Close out document deliverables:
  - 1. **Project Manual.** All documents included shall be copies of the executed originals. Blank documents or templates will not be accepted. This document will contain 8 sections divided by bookmarks. Refer to sample document in the Electronic Close Out model in folder" A. Project Manual".
    - a. Create a Project Manual coversheet (This is not the Project Specifications Title Page). Coversheet shall contain at minimum the Facility's Name, Jeffco's Project Number, Project Name and Record Document Date. Also identify project's prime consultant and prime contractor. Coversheet shall appear in the PDF bookmarks.
    - b. Create a Table of Contents and place at the beginning of document (This is not the Project Specifications Index or Table of Contents). Table of contents page shall identify the Facility Name, Jeffco's Project Number and Project Name. Table of Contents shall appear in the PDF bookmarks.
    - c. Table of contents shall be sectioned (8 tabs) as follows:
      - (1) Section 1
        - (i) Notice of Advertisement.
        - (ii) Letter of Acceptance
        - (iii) "No Asbestos" letter by consultant

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- (2) Section 2
  - (i) Notice to Proceed
  - (ii) Notice of Award
  - (iii) Recommendation of Award
  - (iv) Approval of Award
- (3) Section 3
  - (i) Project Specifications Title Page
  - (ii) Project Specifications Index
  - (iii) Invitation to bid
  - (iv) Instruction to bidders
  - (v) Proposal (Bid Form)
  - (vi) Bid Bond
  - (vii) Power of Attorney
  - (viii) Performance and Payment Bond
  - (ix) Labor and Material Bond
- (4) Section 4
  - (i) Schedule of Values
  - (ii) List of Subcontractors
- (5) Section 5
  - (i) Construction Agreement
  - (ii) General Conditions
  - (iii) Project Specifications
    - 1. Identify actual product used, including supplier and contact phone number
    - 2. Highlight selection with BOLD text
- (6) Section 6
  - (i) Change orders
- (7) Section 7
  - (i) Addendum (If Any)
- (8) Section 8
  - (i) Building Permit
  - (ii) Certificate of Occupancy and/or Completion
  - (iii) Insurances
  - (iv) Original Warranties
  - (v) Mechanical, Electrical and /or Plumbing Inspections
  - (vi) Special Inspections / Third Party Inspections and approvals such as:
    - a. Elevators
    - b. Backflow preventers
    - c. Boilers
    - d. Kitchen Exhaust Hoods
- d. If any of the above items within a section were not produced for the project, indicate with an “N/A” right next to the item.
- e. One single PDF version of the Project Manual as presented in the Electronic Close Out model. The name for this PDF file shall be named with Jeffco’s Project No. and the title Project Manual. PDF shall be bookmarked showing the main 8

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sections reflecting the Table of Contents. Each item under the 8 main sections shall be bookmarked as shown in the Electronic Close Out model.

- f. Keep PDF file size under 250MB. If file exceeds this limit, divide document into sections. Call the first section PROJECT MANUAL VOL. 1 and then second section PROJECT MANUAL VOL. 2, etc. Each volume shall have a Cover Sheet and a Table of Contents.
- g. Provide a separate as-constructed Project Specifications document (Section 5) in Microsoft Word format.

**2. Record Drawings:**

- a. One single as-printed PDF version of entire drawing set. PDF set must be bookmarked as follows: Design System (General, Civil, Landscape, Irrigation, Structural, Architectural, Mechanical, Plumbing, Fire Protection, Electrical, etc)  
(1) Also bookmark each sheet by Sheet Number and Sheet Title (i.e. M-001 – MECHANICAL CODE SHEET)
- b. Keep PDF file size under 250MB. If file exceeds this limit, divide document into sections. Call the first section “Drawing\_Set\_Name” VOL. 1 and then second section “Drawing\_Set\_Name” VOL. 2, etc. Each volume shall have a Cover Sheet and a Drawing Index.
- c. One AutoCAD file per drawing.
- d. One full size white bond drawing set.
- e. For projects that contain more than one facility (District-Wide Projects), coordinate with the District Archivist to provide separate drawing sets and other documents by facility.

**3. Operations & Maintenance Manual.** One single as-printed PDF version of the entire O & M Manual as presented in the Electronic Close Out model.

- a. Create an O & M Manual Coversheet. Coversheet shall contain at minimum the Facility’s Name, Jeffco’s Project Number, Project Name and Record Document Date. Also identify project’s prime consultant and prime contractor. Coversheet shall appear in the PDF bookmarks. Create a Table of contents and place at the beginning of document. Table of Contents shall be included in the PDF bookmarks. Table of Contents page shall contain the following sections:
  - (1) Sub vendor list
  - (2) Copies of Warranties and Guaranties
  - (3) CSI MasterFormat Divisions List
- b. PDF file name shall include “Jeffco’s Project Number. and titled “O and M Manual”. PDF shall be bookmarked showing the sections reflecting the Table of Contents.
- c. Keep PDF file size under 250MB. If file exceeds this limit, divide document into sections. Call the first section OPERATIONS AND MAINTANACE MANUAL VOL. 1 and then second section OPERATIONS AND MAINTANACE MANUAL VOL. 2, etc. Each volume shall have a Cover Sheet and a Table of Contents.

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4. **Approved Shop Drawings** (see systems list below). Provide separate copy if included in in the Record drawing set.
  - a. Systems list:
    - (1) Fire Suppression.
    - (2) Building automation.
    - (3) Security and Fire Alarm. Ensure all room numbers and descriptions have been coordinated with Archives to align with the District’s official floor plan composite.
    - (4) Fire Alarm Graphic Map. Ensure all room numbers and descriptions have been coordinated with Archives to align with the District’s official floor plan composite.
  - b. One single as printed PDF version of Approved shop drawing set. PDF must be bookmarked as follows:
    - Sheet number and Sheet Title (i.e. FA-08 – GRAPHIC MAP)
  - c. One AutoCAD file per drawing.
  - d. For projects that contain more than one facility (District-Wide Projects), coordinate with the District Archivist to provide separate drawing sets and other documents by facility.
  
5. **Shop Drawings and Product Data** as submitted and approved.
  - a. One single PDF version of the Shop Drawings and Product Data document as presented in the Electronic Close Out model. The name for this PDF file must include Jeffco’s Project No and be titled, ”Shops and Product Data”. PDF shall be bookmarked by utilizing CSI MasterFormat Division List Sections. Locate each product data sheet in the appropriate CSI division bookmark. Adhere to sample PDF in Electronic Close out model in folder “D. Shop Drawings and Product Data” Create a Shop Drawings and Product Data Coversheet. Coversheet shall contain at minimum the Facility’s Name, Jeffco’s Project Number, Project Name and Record Document date. Also identify project’s prime consultant and prime contractor. Coversheet shall appear in the PDF bookmarks.
  - b. Create a Table of Contents and place at the beginning of document. Table of Contents shall be included in the PDF bookmarks. Table of Contents page shall contain all CSI MasterFormat Divisions used on the project.
  - c. Keep PDF file size under 250MB. If file exceeds this limit, divide document into sections. Call the first section SHOP DRAWINGS AND PRODUCT DATA VOL. 1 and then second section SHOP DRAWINGS AND PRODUCT DATA VOL. 2, etc. Each volume shall have a Cover Sheet and a Table of Contents.
  
6. **Miscellaneous documents** not included in the above requirements (consult with District Archivist)
  - a. One paper copy loose in boxes. With approval of the District Archivist, documents may be placed in 3-ring binder. Label document as in CG18.1.b.
  - b. One single as-printed PDF version of miscellaneous document. PDF must be bookmarked reflecting all different sections identified in hardcopy document.

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- c. Keep PDF file size under 250MB. If file exceeds this limit, divide document into sections. Call the first section VOL. 1 and then second section VOL. 2, etc. Each volume shall have a Cover Sheet and a Table of Contents.
  - d. If applicable box should be organized and divided utilizing CSI MasterFormat Division List Sections.
  - e. Do not split division between two boxes.
  - f. Maximum box size should be 15.25" L x 12.25"W x 10.25"H. (i.e. standard Banker's box).
7. **Master Plans, Geotechnical Reports, Studies and similar** (see CG008, CG009, CG010):
- a. Documents required to be sealed by Engineer or Architect of Record, as appropriate.
  - b. One text searchable and bookmarked PDF. Bookmark document's chapters, sections, headings and subheadings, etc., as appropriate.
8. **Large Format Sealed Surveys, Plats and Legal Property Descriptions:**
- a. One full size white bond for each drawing set.
  - b. One as printed PDF of each drawing.
  - c. One AutoCAD file.
9. **Asbestos Abatement Final Project Report.** This document will contain 8 sections divided by tabs.
- a. Request Required Report Format from District Project Manager
    - (1) One single as-printed PDF version of entire Asbestos Abatement Final Project Report. The name for this PDF file shall be "Facility Name" Abatement Report. PDF must be bookmarked showing 8 sections reflecting the Table of Contents.
    - (2) Create a Table of contents and place at the beginning of document. Table of contents page shall identify the Facility Name, JEFFCO's Project Number and Project Name.
    - (3) Table of contents shall be sectioned (8 tabs) as follows:
      - (a) Section 1 – Major Response Action Report
        - 1. Major Response Action Report form (contact Environmental Services for most up-to-date form)
      - (b) Section 2 – Abatement Close out Report
      - (c) Section 3 – Drawings Showing Location of Abatement Scope of Work
      - (d) Section 4 – Bulk Sample Data
        - 1. Sample locations
        - 2. Quantity of homogeneous area
        - 3. Analytical results and certification of consultant collecting bulk samples
      - (e) Section 5 – Air Monitoring: Background sampling and personal air monitoring
      - (f) Section 6 – Final Air Clearance

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1. Locations of where samples were collected; date and time of collection and laboratory names and addresses where samples were analyzed.
- (g) Section 7 – General Abatement Contractor Final Report
  1. OSHA Monitoring
  2. Names and addresses, AHERA and Colorado certification numbers of all personnel involved
- (h) Abatement permit and Waste Manifest Certification
  1. Abatement permit/notice
  2. Waste Manifest certification

10. **Revit files.** Prime consultant must submit all Revit files pertaining to the project if such files were used in project. Place Revit files in folder B.03 of Electronic Close Out package.

11. **Redlined construction drawing set.**

- a. One single scanned PDF version of entire drawing set redlined on-site by contractor and submitted to consultant for updating.

12. **Training video recordings.**

- a. If the project requires training video recordings, submit electronic file(s) in MPEG-4 format or equivalent. May be included in a separate flash drive from other close-out documents, if necessary.

- Summary of Closeout Document Deliverables (all Closeout Document Deliverables shall be submitted to the District Project Manager no later than 30 working days after Date of Project Acceptance):

REFERENCE	DOCUMENT	HARDCOPY WHITE BOND	PDF	CAD, WORD OR EXCEL	
CG018.1	Project Manual	Not Required	1	1	
CG018.2	Record Drawings	(1) Full size	1	1	
CG018.3	O & M Manual	Not Required	1		
CG018.4	Approved Shop Drawings	(1) copy	1	1	
CG018.5	Shop Drawings & Project Data	Not Required	1		
CG018.6	Miscellaneous and Other Documents	Not Required	1		
CG018.7	Master Plans, Reports, Studies, etc.	Not Required	1	1	



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CG018.8	Large Format Surveys, Plats and Legal Property Descriptions	(1) Full size	1	1	
CG018.9	Asbestos Abatement Final Project Report	Not Required	1		
CG018.10	Redlined construction drawing set	Not Required	1		

END SECTION CG 018