



Capital Projects Management

Request for Proposal #P2000008
Engineering Services

Issued March 26, 2024

Dakota County
Law Enforcement Center
Boiler and Chiller Replacement
1580 Highway 55, Hastings, 55033

Due Date: April 23, 2024 and 11:00 AM (CST)

A. General Purpose and Proposal Guidelines

1. Purpose: Dakota County is seeking proposals for removal of two existing steam boilers, steam piping, and steam coils and replacement with hot water boilers, hot water piping, and hot water coils and also the replacement of two chillers for the Law Enforcement Center. This work will include the complete replacement of all the thirteen air handlers. It's a multi-year, multi-phase project. See **Attachment P** for Central Energy Plant Study for the Law Enforcement Center dated June 22, 2023 and prepared by CMTA, BKBM Engineers, and Gilbert Mechanical.

Anticipated professional services include:

- Mechanical Engineer
- Structural Engineer
- Electrical Engineer
- Architect
- Cost Estimator

2. Dakota County- Project Manager

Questions regarding this Request for Proposal should be directed to:

Joe Lexa, Project Manager
Capital Projects Management
Dakota County Administration Center
1590 West Highway 55, Hastings, MN 55033
Phone: 651-438-4566 E-mail: Joe.Lexa@co.dakota.mn.us

3. Key Dates:

Request for Proposal Issued	March 26, 2024
Pre-Proposal Meeting and Project Tour	April 3, 10:00 AM
Written Questions Due to Project Manager	April 10, 10:00 AM
Questions Answered/RFP Addendum Issued	April 17
Proposal Responses Due	April 24, 1:00 PM
Short Listed Firms Identified	May 7
Interviews (must be available on this date)	May 13
Board Approval of Design Professional Selection	June 4
Work to Commence after Contract Executed	June 24
Schematic D. Presentation to Board/Board Committee	September 17
Bid Documents for owner review	December 12
Bid Advertisement	January 2
Bids Due	January 23
Board Approval of Construction Contract Award	+/- Feb 11, 2025
Construction Start	March 4, 2025
Construction Substantial Completion	November 11, 2026
Project Close out	December 31, 2026

4. Selection Process: The County will review and rank proposals to determine which firm will be selected based on the following evaluation criterion:
 - a) Firm History and Information
 - b) Project Team and Team Member Experience
 - c) Project Approach and Schedule
 - d) Firm Experience and References
 - e) Contract and Conditions
 - f) Fee Proposal

B. Background and Nature of Project

1. **Project Background:** The Law Enforcement Center (LEC) was constructed in 1988 and is 153,000 square feet. There are three floors. This building serves as the County's only jail and is a 24/7 operation. The building contains two dual fuel central steam boilers, steam to hot water converter, and a chilled water system that consists of two chillers and a three-cell cooling tower. There are 13 air handling units in the LEC. This equipment, excluding the cooling tower, is 35 years old and past the useful life expectancy.
2. **Project Description:** Convert the existing steam heating system to a hot water heating system. Replace the existing steam boilers with dual fuel (gas/oil) N+1 redundant high efficiency condensing boilers. Run new hot water piping to all existing air handling units and to existing steam-to-hot water heat exchangers. Existing heat exchangers and pump sets would be removed, and the existing hot water piping would be connected to new hot water piping from the new boiler system.

The existing chillers and chilled water pumps would be removed and replaced with a new N+1 redundant constant primary, variable pumping chilled water central plant. The existing cooling towers and condenser water pumps will be reused as they are in fair condition and of sufficient capacity for a new chiller system. Chilled water piping would be reused throughout the facility.

All air handling units would be replaced. New air handling units are assumed to be the same supply airflow capacity as the existing ones. All new units would be hot water heated, chilled water air-conditioned, and variable volume air flow. The new units would also receive all new DDC controls and where practical, energy recovery.

Reference Attachment P to further clarify the work.

3. **Project Construction Budget:** The design team shall base its fee on the construction budget amount of \$5,700,000. This is the amount expected from the General Contractor on bid day and does NOT include other project soft costs.

C. Scope of Services to be Provided

1. The design team shall provide engineering and associated architectural services needed to complete the new facility building and site design from schematic design, through construction administration services, and project closeout.
2. The design is to conform to current national best practices and **Attachment G Dakota County Design and Construction Sustainability Standards**.
3. The design team will be responsible for ensuring that applicable Federal, State, and local codes and regulations related to the design are met.
4. All communication with the County will go through the County's Project Manager, unless approved otherwise in writing by the Project Manager.
5. The County will identify a Core Team (CT), responsible for decision making and overall project direction from inception to beneficial use. The County will also identify one or more Technical Advisory Groups (TAGs) of users, technical specialists, and stakeholders who will be directly impacted by the project. Work sessions will be held with TAGs to confirm the program, manage specific systems details, and explore design options through the end of Design Development.
6. The design team will meet with County staff as often as needed to complete the project. The County understands that virtual meetings (via Teams, Zoom, etc.) can be efficient and sometimes required. However, in-person meetings should account for at least one third of all planned meetings. These meetings will likely be held at the Law Enforcement Center in Hastings. A kickoff meeting and at least three review meetings (one near the end of each design phase) will be held in person with the Core Team and design team members.
7. The Design Team shall provide a draft meeting agenda for each Core Team Meeting to County PM for approval three days prior to meeting. All presentation materials shown at meetings must be pre-viewed by County PM along with the agenda. Provide meeting minutes for all design meetings within five (5) days of the meeting.
8. At the end of Schematic Design, the design team shall prepare and provide documents to the County for presentation to the County Board as they seek schematic design approval. Presentation documents may include program summaries, plan drawings, renderings, videos or other instruments to be used to summarize the project scope and design direction. The design team shall also prepare a construction cost estimate for the project at this stage as well as provide review and comment on an independent cost estimate, if one is prepared by the Owner for the project.
9. The design team will prepare drawings and a project manual with technical specifications for bidding and construction.
 - a) The Dakota County General Conditions front end will be used in lieu of the AIA A201 General Conditions. The County will prepare and provide these documents to the design team for incorporation into the project manual.
 - b) The construction document drawings (architectural, plumbing, mechanical, electrical, technology, furniture, etc.) will be done in AutoCAD or Revit. All drawings will be saved as individual files in PDF format and also in either AutoCAD

- or Revit depending on system used by the primary design team. These files will be provided to the County.
- c) The sheet size of all drawings will be 30" x 42." Plan drawings will be at 1/8" scale or larger.
 - d) The Project Manual (including technical specifications) will be prepared in MS WORD and provided to the County in both MS WORD and PDF formats. A copy will be provided to the County at Bidding.
 - e) The cost of providing the construction documents (drawings and project manual) via AutoCAD, as PDF, and in MS WORD is to be included in the labor portion of your proposal and is not a reimbursable expense.
 - f) The Designer is to provide to the County up to four (4) full-size drawing sets, two (2) half-sized drawing sets and two (2) project manuals or narratives to the Owner at Schematic Design for review, Design Development for review, two different sets during Construction Document reviews and Construction Documents issued for Bidding. The cost of printing these required document sets will be included in the fee proposal as a reimbursable expense.
10. The Design Team is responsible for project design to meet (not exceed) construction budgets and must estimate the cost of construction at each phase. They may choose to retain their own cost estimating consultant or use in-house staff. In addition, the County will hire an independent Cost Estimator to conduct periodic cost estimates and assist in value engineering. The selected design team will cooperate with the Owner's Cost Estimator in the preparation of three cost estimates at the following milestones:
 - a) End of Schematic Design
 - b) End of Design Development
 - c) Approximately 65% Construction Documents. Note we usually do not provide estimates at the end of CDs as they come too late to be useful to change the documents in any meaningful way. IF a project is placed on hold before bidding, an estimate of the work up to that point is useful if the project does not expect to be restated in less than one year.
 11. Cost estimates from the Design Team and Owners must be reconciled to create a cost model that does not exceed the construction budget. Although many single items may be carried as alternates so that their value can be assessed during design, the county usually develops only three or four add alternates based on the construction documents estimate which will be brought through to bidding. If the construction budget is increased to cover the actual cost of items in the original program, the Design Team is not entitled to an increase in fee.
 12. All Additional Service requests need to be made in writing at the time that the extra effort is either requested by the owner or needed by project requirements. All such requests must be approved by the county before work can begin on the item.
 13. During Construction Administration, the design team and their consultants agree to utilize the electronic submittal service provided by the County or the Contractor during construction including submittals, RFI's, ASI's, change requires and closeout documents.
 14. The County will use a General Contractor on this project. The General Contractor will be selected through a public open bidding process. The project will be awarded to the

lowest responsible and responsive bidder. The design team will enable this process and prepare plan review application pages for City, State or other permits as required.

15. Ownership of all drawings, reports, and other work products prepared or produced, including those in electronic form, shall be conveyed to the County upon completion or termination of the Design Team.
16. After the general contractor demonstrates that its work is substantially complete, the design team will prepare the final punch list for review by County staff and then confirm all punch list items are complete. At the completion of the project, the architect must provide a complete set of Record Documents to be created from the contractor's as-built drawings that include all addenda and changes made via field change, supplemental instructions, requests for information, proposal requests, etc.

D. Specific Deliverables

1. Schematic Design: Provide a minimum of the following items.
 - a) Meeting agendas and minutes.
 - b) Provide 100% Schematic Design documents (drawings and outline specifications or narratives) for review and cost estimate. *Project cannot move to next phase if scope is over budget. Design team to redesign to meet budget.*
 - c) Four (4) interior views and line diagrams (Revit, Sketch-up, or other electronic means) for use in County Board Meetings. Materials shall be ready 3 weeks prior to the presentation.
 - d) Update Project Schedule.
2. Design Development: Provide a minimum of the following items.
 - a) Meeting agendas and minutes.
 - b) Provide 100% Design Development documents (drawings showing all intent and developed project manual with technical specifications) for review and cost estimate. *Project cannot move to next phase if scope is over budget. Design team to redesign to meet budget.*
 - c) Provide Project Manual in current edition of MasterFormat by Construction Specifications Institute (CSI).
 - d) Provide major equipment fixture cut sheets organized per specification section.
 - e) Respond to comments provided by the County Insurer's review of the Design Development documents and incorporate into the Construction Documents.
 - f) Update Project Schedule.
3. Construction Documents: Provide a minimum of the following items.
 - a) Meeting minutes and agendas.
 - b) Creation of bidding alternates that equal up to 10% of the construction value of the project to safeguard project budgets. *Project cannot move to Bidding if scope is over budget. Design team to redesign to meet budget.*
 - c) Construction Documents including drawings and project manual with technical specifications for Owner Review and approval at 65% and 100% completion. 65% CD set to include full definition of scope of work and developed project manual, including Owner's front end documents. 100% CD set to include fully developed drawings and project manual with no missing items. These reviews will be followed by review comments and final edits before documents are issued for Bidding and Plan Reviews.
 - d) Provide a printout of the county's **Design and Construction Sustainability Standards** noting that each item has been incorporated into the final design and if not, noting when then owner approved the departure from the standards.
 - e) Update Project Schedule.
4. Bid & Award Phase: Provide a minimum of the following items.
 - a) Respond to jurisdictional comments (City Plan Check Review, State Plumbing review, State Department of Corrections, etc.) for approval of a Building Permit.

- b) Attendance at Pre-Bid conference.
 - c) Respond to questions with issuance of Addendum(s) as required during bidding. This will include alternate products review.
 - d) Assist Owner in reviewing the bids, selecting alternates, and if required, in value engineering.
 - a) Construction Administration Services: Provide a minimum of the following items. Attend weekly contractor-hosted construction progress meetings held on site and review Contractor's meeting minutes for accuracy.
 - b) Provide weekly field observations of the work progress, noting any observed deficiencies. Provide appropriate team member onsite oversight (architect, landscape architect, appropriate engineer, etc.) as needed but not less than once per month during installation of systems under their care.
 - c) Submittal (including shop drawings) review and approval.
 - d) Pay Application review and approval.
 - e) Change Order preparation, review and approval.
 - f) Respond to Requests For Information (RFI's).
 - g) Coordinate and review specialty testing, contracted separately by Owner.
 - h) Attend equipment start-up and testing of base systems and provide support to County's third-party commissioning agent.
 - i) Prepare punch list, review and document when list is completed.
 - j) Provide and approve Substantial Completion form.
5. Closeout Phase:
- a) Review and approval of As-Built Documents as provided by the Contractor
 - b) Create Record Documents (drawings and technical specifications) from as-builts provided by Contractor.
 - c) Eleven-month warranty walk-through and documentation.

E. Proposal Requirements – Proposer, read and follow carefully

To facilitate the selection process, the following information *MUST* be included in your proposal, each in its own tabbed or labeled section, and arranged in the following order. **The total proposal response should not exceed 25 pages.** (*The Cover Letter, Fee Proposal and Attachments are separate documents and not included in the page count.*) A page is one face of a two-sided piece of paper. Use both sides of the paper where possible as both sides count towards the page maximum. The Proposal Response shall address each item listed below. **Failure to respond to each proposal requirement/question assumes quality control measures may not have been taken and may count against your team.** The proposal response, with changes as required, will become a part of the final contract for services.

1. Cover Letter: Cover letter should be attached at the front of the Proposal Response. The following elements *MUST* be included in the cover letter.
 - a) Official firm name (as recognized by the State of Minnesota), address, and phone number of the firm;
 - b) Acknowledgement of receipt of all RFP addenda, if any;
 - c) Name, title, address, telephone number, fax number, and email address of contact person during the period of proposal and/or contract evaluation;
 - d) A statement to the effect that the proposal shall remain valid for a period of not less than 120 days from the date of submittal; and
 - e) Signature of a person authorized to bind the responder to the proposal terms.
2. Firm History and Information: Limited to two pages. Provide overall firm history and background information, including information on all subconsultant firms. Focus to be on design projects like this one and should convey your team's collective ability to complete the work.
3. Project Team and Team Member Experience:
 - a) Project Organizational Chart: Provide a complete project organization chart showing involvement and correlation of project key members and all other contracted consultants. Show consultants by company, individual's name, title and project role.
 - b) Experience of Design Team Members: Provide the following information for each proposed key team member:
 - i. Name
 - ii. Firm for which they work
 - iii. Professional Licensure(s), Education, and Professional Affiliations.
 - iv. Number of years working for current firm **and** total number of years of professional work experience.
 - v. Job title/role for this project
 - vi. Specific duties assigned on this project
 - vii. Recent experience on similar projects. When describing experience, begin with the individual's most recent projects and include project name, location, similar aspects to this project, construction budget, year completed, the individual's job title or responsibilities on project, and firm

(if different than current).

viii. A matrix showing personnel who have worked on the same projects at the same time is helpful but not required.

4. Project Approach and Schedule:

- a) Approach: Narrate how you will approach the project including forms of communication, design team change management (for example - if a design team member leaves the team), planning, scheduling, and quality control. Describe steps you will take to ensure that all aspects of the project will be coordinated. Beware of using standards copy. Rather, be as specific to this project as possible using examples from approaches that have worked well in the past.
- b) Schedule: Provide a Gantt chart schedule reflecting the requirements of this project, including a detailed plan to complete all work with use of specific dates. Do not provide durations only, such as number of weeks or months. Incorporate the key dates and milestones provided in this proposal into your schedule. Review and confirm agreement of the schedule information provided within this RFP. Provide a separate narrative of recommended schedule modifications if they reduce cost or otherwise improve the project.

5. Firm Experience and References:

- a) Experience: Provide three examples of previous comparable projects. Provide up to one page for each example project. Be clear on the date, size and budget for each project and whether it was completed or still in progress. Redact any information your previous client would not want public.
- b) References: Provide references (name, address, email and phone number) for three comparable projects. *List the similar project(s) that relate to the reference.* Validate the contact information is correct; inability to contact references may inhibit the County's ability to award you the work. Do not use federal projects as references because what federal staff can offer as a reference is very limited and most often not useful.

6. Contract and Conditions:

- a) Include a completed **Attachment C Trade Secret Information Form** including indication of the selection of the appropriate box.
- b) Review **Attachment D Sample of Dakota County Standard Form of Contract Agreement for Professional Services**, **Attachment E Insurance Terms**, and **Attachment F Standard Assurances**. In this tab of your Proposal Response, provide a list of suggested modifications to these documents, if any. If none, state so.
Note: If no modifications are requested in the Proposal Response, none will be entertained during the contracting process.

7. Separate Envelope: Attachment A, Rate Schedule and Attachment B

- a) Submit one completed copy of **Attachment A Fee Proposal Schedule & Hourly Rates** in the separate envelope.
- b) Provide a current Rate Schedule for all anticipated staff roles that may work on the

- project in the separate envelope.
- c) Include a signed **Attachment B Non-Collusion and Conflict of Interest Statement** in the separate envelope.
 - d) Note: Do NOT bind this information into the hard copies of the Proposal Response. These items should also be saved as a separate electronic file and shall not be included in the electronic copy of the Proposal Response if one is submitted.
8. Submission of Proposal: All items to be received by the County Project Manager on or before the date and time listed in this RFP.
- a) Five (5) hard copies and one (1) electronic copy of the proposal in PDF format.
 - b) One (1) hard copy and one (1) electronic copy of **Attachment A Fee Proposal Schedule & Hourly Rates**, Rate Schedule and **Attachment B Non-Collusion and Conflict of Interest Statement** to be provided in a **separate envelope**.
 - c) Proposal Responses may need to be disassembled for duplication, so assemble hard copies with comb binding or stapling. Do not issue in hard sided bound notebooks.
 - d) The electronic copy may be emailed to the County Project Manager or delivered on a flash drive with the printed copies. If an email is sent to deliver the electronic copy, the file size shall not exceed the County's electronic file transfer size (currently 10 MB).
 - e) The County may reject or return for completion any proposal that is not sufficiently detailed or that is in an unacceptable form.

F. Specific Terms of the Work

1. **Contract Format:** The selected consulting firm/agent will be required to sign a contract with Dakota County. Refer to **Attachment D Sample of Dakota County Standard Form of Contract Agreement for Professional Services** and **Attachment E Insurance Terms**. Under the Contract and Conditions Tab, your proposal should indicate if your firm has any issues with the proposed contract language or insurance requirements. Additional contract conditions may be required, depending upon the nature and extent of the services provided. The County reserves the right to negotiate a change or modification to the proposed contractual conditions. Also refer to **Attachment F Standard Assurances** and **Attachment C Trade Secret Information Form**.
2. **Parties to the Contract:** A contract will be executed between Dakota County and a prime consultant firm. In the case of a project team of multiple consultants, a prime consultant firm shall be responsible for subcontracting with the other consultant firms. There will be no legal relationship with Dakota County and the subcontracted consultant firms. The prime and subcontracting consultant firms shall be responsible in providing the required submission information via a single proposal.
3. **Contract Term:** The term of the contract to be awarded under this RFP will be from the date executed by all parties until services are complete which is generally 12 months after Substantial Completion by the General Contractor. For a multi-phase construction project, the 12 months would follow the Substantial Completion of the last phase.
4. **Fee Proposal:** The Consultant's fee proposal shall be structured to be an hourly rate with a maximum, not-to-exceed, fee amount. The Fee Proposal shall also include a maximum, not-to-exceed, amount for reimbursable expenses. Taken together, the labor and expenses will form the maximum for the contract amount.
5. **Reimbursable Expenses:** Reimbursable expenses are expenses attributed directly to the project and will be billed at actual costs up to, but not exceeding, the estimate given in your Fee Proposal. No mark-up is allowed on these costs. **Internal printing costs and local transportation/travel are to be included in the fee proposal and are not reimbursable expenses.**
6. **Payments:** Billing for completed services shall be based upon a monthly invoice submitted by the prime consultant firm. The invoice will be formatted to align with the breakdown provided on **Attachment A Fee Proposal Schedule & Hourly Rates**. Back-up for the work of contracted subconsultants must be included. The invoice format used by the prime consultant firm is to be approved by the County Project Manager prior to submittal of the first invoice.
7. **Addenda/Clarifications:** Any changes to this RFP will be made by the County through a written addendum. No verbal modification will be binding.
8. **Contract Award:** Issuance of this RFP and receipt of proposals do not commit the County to the awarding of the contract. The County reserves the right to: postpone opening for its own convenience; accept or reject any or all proposals received in

response to this RFP; negotiate with other than the initially selected Consultant, should negotiations with the selected Consultant be terminated; negotiate with more than one Consultant simultaneously; and/or cancel all or part of this RFP.

9. County Rights: The County may investigate the qualifications of any consultant under consideration, require confirmation of information furnished by the consultant, and require additional evidence of qualifications, to perform the work described in this RFP. The County reserves the right to:
 - a) Reject any or all proposals if such action is in the public interest;
 - b) Cancel the entire Request for Proposals;
 - c) Issue a subsequent Request for Proposals;
 - d) Remedy technical errors in the Request for Proposal process;
 - e) Appoint evaluation committees to review the proposals;
 - f) Establish a short list of consultants for interview after evaluation of proposals;
 - g) Negotiate with any, all, or none of the RFP consultants; and
 - h) Reject and replace one or more subconsultants.
10. Independent Price Determination: Applicants are held legally responsible for their information and fees. Applicants are not to collaborate, for the purpose of restricting competition, with other applicants or competitors in developing proposals and fees.
11. Independent Contractor Status: The Consultant will be an independent consultant, and nothing contained in any contract awarded shall be construed to create the relationship of employer and employee between the County and the Consultant. The Consultant is not eligible for workers' or unemployment compensation benefits. The Consultant understands that no withholding or deduction for state or federal income taxes, FICA, FUTA, or otherwise, will be made from payments due the Consultant and that it is the Consultant's sole obligation to comply with the applicable provisions of all federal and state tax laws.

Attachments

- **Attachment A** Fee Proposal Schedule & Hourly Rates – issued as a separate document.
- **Attachment B** Non-Collusion and Conflict of Interest Statement.
- **Attachment C** Trade Secret Information Form.
- **Attachment D** SAMPLE of Dakota County Standard Form of Contract Agreement for Professional Services contract.
- **Attachment E** Insurance Terms.
- **Attachment F** Standard Assurances.
- **Attachment G** Dakota County Design and Construction Sustainability Standards – issued as separate document.
- **Attachment P** Central Energy Plant Study dated June 22, 2023

Registration and Good Standing: All responders must comply with Minnesota law governing transaction of business in the [State of Minnesota](#). Upon award of the contract, the County will verify compliance prior to contracting.

End of RFP

Attachment A



RFP Comprehensive Fee Proposal

		Phases						Average Hourly Rate	Total Hours	Fee	
		Schematic Design	Design Develop.	Construct. Docs.	Bid & Award	Construct. Admin	Project Closeout				
1	Mechanical Engineer	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -			\$ -	
2	Structural Engineer	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -			\$ -	
3	Electrical Engineer	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -			\$ -	
4	Architect	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -			\$ -	
5	Cost Estimator	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -			\$ -	
6	Other (specify)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -			\$ -	
7	Subtotals	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -			\$ -	
8	Percent of Total Labor Fee										
9	Reimbursable Expenses (Not To Exceed)									\$ -	
10	A not-to-exceed Fee amount plus not to exceed Reimbursable Expenses amount is required.									TOTAL FEE \$ -	

Owner may elect to award any part, in any order, to meet budget constraints.

PROPOSING FIRM NAME:

_____ Official Firm Name

_____ Date

Registration and Good Standing: All responders must be in compliance with Minnesota law governing transaction of business in the State of Minnesota. Upon award of the contract, the County will verify compliance prior to contracting.

Provide the following in a sealed envelope, separate from Proposal Response:

- Attachment A - Fee Proposal (this form)
- Current Hourly Rate Schedule for each employee anticipated to work on the project.
- Attachment B - Non-Collusion and Conflict of Interest Statement

Attachment B

Non-Collusion and Conflict of Interest Statement

Please print or type (in ink)

CONTRACTOR NAME: _____ FEDERAL TAX ID NUMBER: _____

Company Address: _____

City: _____ State: _____ Zip Code: _____

Contact Person: _____ Title: _____

Phone Number: _____ Fax Number: _____ email: _____

In signing this bid, proposal or quote, Contractor certifies that it has not, either directly or indirectly, entered into any agreement or participated in any collusion or otherwise taken any action in restraint of the competition; that no attempt has been made to induce any other person or firm to submit or not to submit a bid, proposal or quote; that this bid, proposal or quote has been independently arrived at without collusion with any other party submitting a bid, proposal or quote, competitor or potential competitor, that this bid, proposal or quote has not been knowingly disclosed prior to the opening of the bids, proposals or quotes to any bid, proposal or quote competitor; that the above statement is accurate under penalty or perjury.

Contractor also certifies that to the best of its knowledge none of its owners, directors, officers or principals (collectively, "Corporate Executive") are closely related to any County employee who has or may appear to have any control over the award, management, or evaluation of the contract. A Contractor's Corporate Executive is closely related when any of the following circumstances exist:

1. A Corporate Executive and any County employee who has or appears to have any control over the award, management or evaluation of the contract are related by blood, marriage or adoption; or
2. A Corporate Executive and any County employee who has or appears to have any control over the award, management or evaluation of the contract are current or former business partners, co-workers, or have otherwise previously worked closely together in the private or public sector; or
3. A Corporate Executive and any County employee who has or appears to have any control over the award, management or evaluation of the contract share a personal relationship that is beyond that of a mere acquaintance, including but not limited to friendship or family friendship.

If one or more of the above circumstances exist, Contractor must disclose such circumstance(s) to Dakota County in writing. Failure to disclose such circumstances invalidates the Contract.

Contractor will comply with all terms, conditions, specifications required by the party submitting a bid, proposal or quote in this Request for Bid, Proposal or Quote and all terms of our bid, proposal or quote response.

Authorized Signature

Title

Date

You are advised that according to Dakota County Board Resolution 18-485 and Policy 2751, if there is a question as to whether there may be an appearance of a conflict of interest, the contract shall be presented to the County Board for approval, regardless of the amount of the contract. Whether a conflict of interest or the appearance of a conflict of interest exists is a determination made by Dakota County.

Submit this form as part of the Bid, Proposal or Quote response.

Signatures on your Bid/Proposal/Quote Response (Non-Collusion, Trade Secret, Bid/Proposal/Quote Forms, etc.) require a 'WET' signature or DocuSign Electronic signature

Attachment C

Trade Secret Information Form

The following form must be provided by Responder to assist the County in making appropriate determinations about the release of data provided in Responder's bid or proposal.

All responders must select one of the following boxes:

- My bid/proposal **does not** contain "trade secret information", as defined in Minn. Stat. § 13.37, Subd. 1(b). I understand that my entire bid/proposal will become public record in accordance with Minn. Stat. § 13.591.

- My bid/proposal **does** contain "trade secret information" because it contains data that:
 - 1. (a) is a formula, pattern, compilation, program, device, method, technique or process; **AND**
 - (b) is the subject of efforts by myself or my organization that are reasonable under the circumstances to maintain its secrecy; **AND**
 - (c) derives independent economic value, actual or potential, from not being generally known to, and not being readily ascertainable by proper means by, other persons who can obtain economic value from its disclosure or use.

- 2. I have submitted one paper and one digital copy of my bid or proposal from which the confidential trade secret information has been excised. The confidential trade secret information has been excised in such a way as to allow the public to determine the general nature of the information removed while retaining as much of the document as possible **AND** I am attaching an explanation justifying the trade secret designation.

Please note that failure to attach an explanation may result in a determination that the data does not meet the statutory trade secret definition. All data for which trade secret status is not justified will become public in accordance with Minn. Stat. § 13.591.

Revised: 6/28/2018

Submit this form as part of the Bid, Proposal or Quote response.

Authorized Signature

Title

Date

Signatures on your Bid/Proposal/Quote Response (Non-Collusion, Trade Secret, Bid/Proposal/Quote Forms, etc.) require a 'WET' signature or DocuSign Electronic signature

Public Records and Requests for Confidentiality

Pursuant to the Minnesota Government Data Practices Act, Minnesota Statutes Section 13.591, the names of all entities that submitted a timely bid/proposal to Dakota County will be public once opened. All other information remains private until Dakota County has completed negotiating a contract with the selected Responder. After a contract has been negotiated, all information received is public information except "trade secret" information as defined in Minnesota Statutes Section 13.37. All information submitted by a Responder therefore shall be treated as public information by Dakota County unless the Responder properly requests that information be treated as a confidential trade secret at the time of submitting the bid/proposal.

Any request for confidential treatment of trade secret information in a Responder's proposal must sufficiently describe the facts that support the classification of information as confidential trade secret. The request must include the name, address, and telephone number of the person authorized by the Responder to answer any inquiries by Dakota County concerning the request for confidentiality. This information shall be provided on the Trade Secret Information Form, see Attachment D. Dakota County reserves the right to make the final determination of whether data identified as confidential trade secret by a Responder falls within the trade secret exemption in the Minnesota Government Data Practices Act.

The envelope or mailing container of any documents submitted with the proposal that the Responder believes contain confidential trade secret information must be clearly marked as containing confidential trade secret information. Each page upon which trade secret information appears must be marked as containing confidential trade secret information.

In addition to marking the documents as confidential, the Responder must submit one paper and one digital copy of the proposal from which the confidential trade secret information has been excised. The confidential trade secret information must be excised in such a way as to allow the public to determine the general nature of the information removed while retaining as much of the document as possible.

The Responder's failure to request confidential treatment of confidential trade secret information pursuant to this subsection will be deemed by Dakota County as a waiver by the Responder of any confidential treatment of the trade secret information in the bid or proposal.

Requests by the public for the release of information held by Dakota County are subject to the provisions of the Minnesota Government Data Practices Act, Minnesota Statutes Chapter 13. Responders are encouraged to familiarize themselves with these provisions prior to submitting a proposal.

By submitting this bid or proposal, Responder agrees to indemnify and hold the County, its agents and employees, harmless from any claims or causes of action relating to the County's withholding of data based upon reliance on the representations that the information is a trade secret as defined in Minnesota Statutes Section 13.37 and therefore is not public, including the payment of all costs and attorney fees incurred by the County in defending such an action.

Revised: 6/22/2018

SAMPLE
CONTRACT BETWEEN THE COUNTY OF DAKOTA
AND SAMPLE
FOR SAMPLE

This Contract (Contract) is made and entered into between the County of Dakota, a political subdivision of the State of Minnesota, by and through its SAMPLE Department (County) and SAMPLE, SAMPLE ADDRESS, (“Contractor”). Contractor and County are collectively referred to herein as the “parties” and individually as “party.”

WHEREAS, the County requires services for SAMPLE, as identified in the County's Request for SAMPLE, dated SAMPLE, attached and incorporated as Exhibit 1; and

WHEREAS, the Contractor represents, covenants, and warrants it can and will perform the services according to the provisions of this Contract and Contractor's SAMPLE (“Contractor’s Proposal”), attached and incorporated as Exhibit 2; and

NOW, THEREFORE, the parties agree as follows:

1. TERM

This Contract is effective and enforceable on the date the last party executes this Contract or a specific future date (“Effective Date”) and expires on SAMPLE or the date on which all Services have been satisfactorily performed and final payment is made, whichever occurs first unless earlier terminated by law or according to the provisions of this Contract.

2. CONTRACTOR'S OBLIGATIONS

- 2.1. General Description. Contractor shall provide the services generally described in the SAMPLE and Contractor’s Proposal (collectively, “Services”).
- 2.2. Conformance to Specifications. Contractor represents, covenants, and warrants it can and will perform the Services in a timely manner according to this Contract.
- 2.3. Substantial Completion. Contractor agrees to substantially complete the work, labor, or services under this Contract on or before SAMPLE.
- 2.4. Standard of Care. In the performance of the Services, Contractor shall use the care and skill a reasonable practitioner in Contractor’s profession would use in the same or similar circumstances.
- 2.5. Ability to Perform. Contractor shall maintain staff, facilities, and equipment necessary to perform under this Contract. Contractor shall promptly provide Notice to the County when it knows or suspects it may be unable to perform under this Contract. The County shall determine whether such inability requires amendment or termination of this Contract. No Notice of Default is required to terminate under this section.
- 2.6. Changes in Policy or Staff. The County may terminate this Contract by providing 10 calendar days’ Notice if the Contractor makes or proposes significant changes in policies or staffing.
- 2.7. Successors and Assigns. In the event that the Contractor is subject to a voluntary or involuntary dissolution, merger, sale, transfer, reorganization, acquisition, or winding down of the Contractor’s business, to continue Services under the Contract the Contractor must receive written consent from the County permitting the Contractor to assign, bind, benefit, and/or ensure the Contractor’s successor, legal representatives, trustees assume all rights, duties, liabilities, obligations, and provisions of the Contract.

3. PAYMENT

- 3.1. Total Cost. County will pay Contractor a total amount not to exceed **SAMPLE** and **SAMPLE** /100 Dollars (**\$SAMPLE**) (“Contract Maximum”). The Contract Maximum is not subject to any express or implied condition precedent. The County is not required to pay for any minimum amount of any Services.
- 3.2. Compensation. The County shall pay for purchased Services in the fixed amounts set out in the Contractor’s Proposal.
- 3.3. Time of Payment. The County shall pay Contractor within 35 calendar days after the date on which Contractor’s invoice is received. If the invoice is incorrect, defective, or otherwise improper, the County will notify Contractor within 10 calendar days after the date on which the invoice is received. The County will pay Contractor within 35 calendar days after the date on which the corrected invoice is received.
- 3.4. Interest on Late Payments. This provision is required by Minn. Stat. § 471.425. The County shall pay interest of 1 ½ percent per month or any part of a month to the Contractor on any undisputed amount that is not paid on time. The minimum monthly interest penalty payment for an unpaid balance of \$100 or more is \$10. For unpaid balances of less than \$100, the County shall pay the actual interest penalty due the Contractor.
- 3.5. Late Request for Payments. The County may refuse to pay invoices received or postmarked more than 90 calendar days after the date that the invoiced Services were performed.
- 3.6. Payment for Unauthorized Claims.
 - A. Payment does not prevent the County from disputing the claim. Payment of a claim is not a waiver, admission, release, ratification, satisfaction, accord, or account stated by the County.
 - B. The County is not responsible for any interest, fee, or penalty if it withholds payment for failure to comply with any provision of this Contract or during the pendency of an audit or inspection.
 - C. If the County requires an audit or inspection, the County does not have to pay any invoices until the audit or inspection is complete. Upon completion of the audit or inspection, the County will pay the Contractor pursuant to the time period for payment after receipt of an invoice.
 - D. The County may offset any overpayment or disallowance of claim by reducing future payments.

4. COMPLIANCE WITH LAWS/STANDARDS

- 4.1. General. Contractor shall abide by all Federal, State or local laws, statutes, ordinances, rules, and regulations now in effect or hereafter adopted pertaining to this Contract or to the facilities, programs, and staff for which Contractor is responsible. This includes, but is not limited to, all Standard Assurances, which are attached and incorporated as **[Exhibit 4]**. Any violation of this section is a material breach of this Contract. No Notice of Default is required to terminate under this section.
- 4.2. Minnesota Law to Govern. The laws of Minnesota govern all matters related to this Contract, without giving effect to the principles of conflict of law. Venue and jurisdiction for any litigation related to this Contract must be in those courts located within Dakota County, State of Minnesota or U.S. District Court, District of Minnesota.
- 4.3. Licenses. At its own expense, Contractor shall procure and maintain all licenses, certifications, registrations, permits, or other rights required to perform the Services under this Contract. Contractor shall furnish copies of the above to the County upon request. Contractor shall provide Notice to the County of any changes in the above within 5 calendar days of the change. Any violation of this section is a material breach of this Contract. No Notice of Default is required to terminate under this section.
- 4.4. Diversity and Inclusion; Prohibited Acts. It is the policy of the County to respect culture and reduce bias in the workplace and service delivery. The County’s commitment to inclusion, diversity, and equity requires that the Contractor uphold respectful regard for cultural differences and recognition of individual protected-class status as defined under law.

The Contractor, its managers, officers and employees shall abstain from discrimination, harassment and retaliatory actions in the performance of this Contract. If the County receives a report of non-compliance with this provision, it will share the report with Contractor, conduct an appropriate investigation as warranted by the nature of alleged behavior, and notify Contractor of the findings of the investigation and

any required remedial actions by the Contractor. The Contractor shall inform the County of compliance with any required remedial actions within the time period provided by the County. If the behavior persists, the County may terminate the Contract in accordance with section 12, Termination. The Contractor shall have policies that prohibit retaliation for reporting that is not in compliance with this provision.

5. INDEPENDENT CONTRACTOR STATUS

Contractor is an independent contractor. Nothing in this Contract is intended to create an employer and employee relationship between the County and the Contractor. Contractor is not entitled to receive any of the benefits received by County employees and is not eligible for workers' or unemployment compensation benefits. Contractor also acknowledges and agrees that no withholding or deduction for State or Federal income taxes, FICA, FUTA, or otherwise, will be made from the payments due Contractor, and that it is Contractor's sole obligation to comply with the applicable provisions of all State and Federal tax laws.

6. NOTICES

6.1. Each Notice must be signed by the Authorized Representative. Notices may be signed electronically. Unless otherwise stated in a specific section of this Contract, any notice or demand, (collectively, "Notice") must be in writing and provided to the Authorized Representative by at least one of the following:

- A. Personal delivery, which is deemed to have been provided upon receipt as indicated by the date on the signed affidavit; or
- B. Registered or Certified Mail, in each case, return receipt requested and postage prepaid, which is deemed to have been provided upon receipt as indicated by the date on the signed receipt, certification, or affidavit; or
- C. Nationally or internationally recognized overnight courier, with tracking service with all fees and costs prepaid, which is deemed to have been provided upon receipt as indicated by the date on the signed receipt, certification, or affidavit; or
- D. Except for Notices of Termination and Notices of Default, email, which is deemed to have been provided upon receipt as indicated by the date on a report generated by the outgoing email server indicating that the email was successfully sent, passed, or transmitted to the email server of the Authorized Representative's email address, or upon receiving an email confirming delivery to the Authorized Representative's email address.

6.2. If the Authorized Representative rejects or otherwise refuses to accept the Notice, or if the Notice cannot be provided because of a change in contact information for which no Notice was provided, then the Notice is effective upon rejection, refusal, or inability to deliver.

7. INDEMNIFICATION

7.1. General. To the greatest extent allowed by law, in the performance of or failure to perform this Contract, Contractor shall indemnify, defend (in the case of third-party claims, with counsel satisfactory to County), and hold harmless the County, its officers, agents, and employees, from and against any actual or alleged loss, litigation cost (including, but not limited to, reasonable attorney fees and costs and expenses of defense), costs, settlement, judgment, demands, damage, liability, lien, debt, injury, harm, fees, fines, penalties, interest, expenditure, diminution in value, disbursement, action, claim, proceeding, or dispute of any sort (collectively "Losses"), whether or not involving a third party, which are attributable to Contractor's, or Contractor's agents', independent contractors', employees', or delegates', actual or alleged:

- A. Intentional, willful, or negligent acts or omissions; or
- B. Actions or omissions that give rise to strict liability; or

C. Negligent or intentional misrepresentation, breach of warranty, covenant, contract, or subcontract

whether or not well-founded in fact or in law, known or unknown, foreseen or unforeseen, fixed or contingent and howsoever originating or existing, and whether or not based upon statute, common law, or equity. This indemnity provision survives expiration or termination of this Contract.

The Contractor's duty to defend the County is not contingent upon a finding of liability or wrongdoing on the part of the Contractor. Rather, the Contractor's duty to defend the County arises whenever an allegation is made—whether in a formal lawsuit or otherwise—that the County is liable to a third party as a result of the conduct of the Contractor. The duty to defend includes, but is not limited to, the Contractor retaining and paying directly legal counsel for the County chosen solely and exclusively by the County in the County's sole discretion.

7.2. Limitations. The indemnification, defense, and hold harmless obligations of this section do not apply to the extent that liability is the direct or proximate result of the negligence or fault of the County or any third party for whom the Contractor is not legally liable. This limitation is not a waiver on the part of the County of any immunity or limits on liability under Minn. Stat. Ch. 466, or other applicable State or Federal law.

7.3. Notice. The parties shall promptly provide Notice in writing and in reasonable detail of:

A. Any demand, action, suit, or proceeding against the party providing Notice; or

B. Any event or fact that may give rise to indemnification under section 7.1 by Contractor.

7.4. Control of Defense and Settlement. Contractor shall promptly provide Notice to the County of any proposed settlement, and Contractor may not, without County's prior written consent (which the County will not unreasonably withhold, condition, or delay), settle such claim or consent to entry of any third-party judgment. Nothing in this section precludes Contractor from allowing County to undertake control of the defense.

8. **INSURANCE**

Contractor shall maintain policies of insurance as set forth in [Exhibit 3], and pay all retentions and deductibles under such policies of insurance. Any violation of this section is a material breach of this Contract. This section survives expiration or termination of this Contract. No Notice of Default is required to terminate under this section.

9. **SUBCONTRACTING**

9.1. Subcontracting Generally Prohibited. Contractor shall not assign or delegate any interest, right, duty, or obligation related to this Contract without the County's prior written consent. The County may void any purported assignment, delegation, or subcontract in violation of this section.

9.2. Permitted Subcontracting. Contractor may subcontract with the subcontractors identified in Contractor's Proposal or as permitted by the County in writing, subject to the following:

A. Contractor shall be responsible for the performance of its subcontractors.

B. All subcontractors shall comply with the provisions of this Contract.

C. Contractor remains responsible for performing Services under and complying with this Contract, regardless of any subcontract.

9.3. Notice to County. Contractor shall provide Notice to the County of any complaint, demand, action, proceeding, filing, lien, suit, or claim that Contractor has not paid or failed to timely pay any subcontractor. Notice must be provided no later than 10 calendar days after the date on which the Contractor first receives the complaint, demand, action, proceeding, filing, lien, suit, or claim.

9.4. Payment of Subcontractors. This provision is required by Minn. Stat. § 471.425. Contractor shall pay the subcontractor within 10 calendar days after the date on which the Contractor receives payment from the County for undisputed Services performed by the subcontractor. Contractor agrees to pay interest of 1½ percent per month or any part of a month to the subcontractor on any undisputed amount not paid on time to the subcontractor. The minimum monthly interest penalty payment for an unpaid balance of \$100 or more is \$10. For unpaid balances of less than \$100, the Contractor shall pay the actual interest penalty due the subcontractor.

9.5. A violation of any part of this section is a material breach of contract.

10. FORCE MAJEURE

Neither party shall be liable to the other party for any loss or damage resulting from a delay or failure to perform due to unforeseeable acts or events outside the defaulting party's reasonable control, providing the defaulting party gives notice to the other party as soon as possible. Acts and events may include acts of God, acts of terrorism, war, fire, flood, epidemic, acts of civil or military authority, and natural disasters.

11. DEFAULT

11.1. Notice of Default. Unless otherwise stated in a specific section of this Contract, no event or circumstance constitutes a default giving rise to the right to terminate for cause unless and until a Notice of Default is provided to the defaulting party, specifying the particular event or circumstance, series of events or circumstances, or failure constituting the default and cure period, if any.

11.2. Cure Period. The party providing the Notice of Default has the option, but is not required, to give the other party an opportunity to cure the specified default. If an opportunity to cure is given, it must be specifically described in the Notice of Default, including any period in which to comply.

11.3. Withholding Payment. Notwithstanding any other provision of this Contract, the County may, after giving Notice of Default, withhold, without penalty or interest, any payment which becomes due after Notice of Default is provided until the specified default is excused or cured, or the Contract is terminated.

12. TERMINATION

12.1. Termination Without Cause. Either party may terminate this Contract without cause by providing 30 calendar days' Notice of Termination to the other party.

12.2. Termination for Cause or Material Breach. Either party may terminate this Contract for cause by providing 7 calendar days' Notice of Termination to the other party, unless a different procedure or effective date is stated within the specific section of this Contract under which the default occurs. In addition to other specifically stated provisions of this Contract or as otherwise stated in law, events or circumstances constituting default and giving rise to the right to terminate for cause, unless waived, include but are not limited to:

- A. Making material misrepresentations either in the attached exhibits or in any other material provision or condition relied upon in the making of this Contract;
- B. Failure to perform Services or provide payment within the time specified in this Contract;
- C. Failure to perform any other material provision of this Contract;
- D. Failure to diligently and timely perform Services so as to endanger performance of the provisions of this Contract;
- E. The voluntary or involuntary dissolution, insolvency, merger, sale, transfer, reorganization, acquisition or winding down of the Contractor's business.

- 12.3. Termination by County – Lack of Funding. The County may immediately terminate this Contract for lack of funding. A lack of funding occurs when funds appropriated for this Contract as of the Effective Date from a non-County source are unavailable or are not appropriated by the County Board. The County has sole discretion to determine if there is a lack of funding. The County is not obligated to pay for any Services that are performed after providing Notice of Termination for lack of funding. The County is not subject to any penalty or damages for termination due to lack of funding. No Notice of Default is required to terminate under this section.
- 12.4. Notice of Termination. The Notice of Termination must state the intent to terminate the Contract and specify the events or circumstances and relevant Contract provision warranting termination of the Contract and whether the termination is for cause.
- 12.5. Duties of Contractor upon Termination. Upon the County providing of the Notice of Termination, and except as otherwise stated, Contractor shall:
- A. Discontinue performance under this Contract on the date and to the extent specified in the Notice of Termination.
 - B. Complete performance of any work that is not discontinued by the Notice of Termination.
 - C. Cooperate with County with any transition of Services.
 - D. Cancel all orders and subcontracts to the extent that they relate to the performance of this Contract.
 - E. Return all County property in its possession within 7 calendar days after the date on which the Contractor receives the Notice of Termination to the extent that it relates to the performance of this Contract that is discontinued by the Notice of Termination.
 - F. Submit an invoice for Services satisfactorily performed prior to the effective date of termination within 35 calendar days of said date.
 - G. Maintain all records relating to the performance of the Contract as may be directed by the County in the Notice of Termination or required by law or this Contract.
- 12.6. Duties of County upon Termination of the Contract for Cause or Without Cause. Upon delivery of the Notice of Termination, and except as otherwise provided, the County shall make final payment to Contractor in accordance with section 3.3 of this Contract for Services satisfactorily performed.
- 12.7. Effect of Termination for Cause or without Cause.
- A. Termination of this Contract does not discharge any liability, responsibility, or right of any party that arises from the performance of, or failure to adequately, perform the provisions of this Contract prior to the effective date of termination. Termination shall not discharge any obligation which, by its nature, would survive after the date of termination, including by way of illustration only and not limitation, the requirements set forth in **[Exhibit 4]** (Standard Assurances) and the indemnity provisions of section 7.
 - B. The County shall not be liable for any Services performed after Notice of Termination, except as stated above or as authorized by the County in writing.
- 13. CONTRACT RIGHTS AND REMEDIES**
- 13.1. Rights Cumulative. All remedies under this Contract or by law are cumulative and may be exercised concurrently or separately. The exercise of any one remedy does not preclude exercise of any other remedies.

13.2. Waiver. Any waiver is only valid when reduced to writing, specifically identified as a waiver, and signed by the waiving party's Authorized Representative. A waiver is not an amendment to the Contract. The County's failure to enforce any provision of this Contract does not waive the provision or the County's right to enforce it.

14. AUTHORIZED REPRESENTATIVE

14.1. The Authorized Representatives of the respective parties for purposes of this Contract are as follows

To the Contractor:

SAMPLE
(Name)

SAMPLE
(Title)

SAMPLE
(Street)

SAMPLE
(City, MN Zip Code)

SAMPLE
(Telephone)

SAMPLE
(Email Address)

To the County:

SAMPLE
(Name)

SAMPLE
(Title)

SAMPLE
(Street)

SAMPLE
(City, MN Zip Code)

SAMPLE
(Telephone)

SAMPLE
(Email Address)

14.2 The Authorized Representative, or his or her successor, has authority to bind the party he or she represents and sign this Contract. The County's Authorized Representative shall have only the authority granted by the County Board. The parties shall promptly provide Notice to each other when an Authorized Representative's successor is appointed. The Authorized Representative's successor shall thereafter be the Authorized Representative for purposes of this Contract.

14.3. In addition, Notices regarding breach or termination shall also be provided to:

Dakota County Attorney's Office
Civil Division
1560 Highway 55
Hastings, Minnesota 55033.

15. LIAISON

15.1. The Liaisons of the respective parties for purposes of this Contract are as follows:

Contractor Liaison: SAMPLE

County Liaison: SAMPLE

Telephone: SAMPLE

Telephone: SAMPLE

Email Address: SAMPLE

Email Address: SAMPLE

15.2. The Liaison, or his or her successor, has authority to assist the parties in the day-to-day performance of this Contract, ensure compliance, and provide ongoing consultation related to the performance of this Contract. The parties shall promptly provide Notice to each other when a Liaison's successor is appointed. The Liaison's successor shall thereafter be the Liaison for purposes of this Contract.

16. OWNERSHIP OF WORK PRODUCT

As the County's contractor for hire, the County shall own in perpetuity, solely and exclusively, all rights of every kind and character, in all proceeds, works, drawings, products, plans, and all other materials created by Contractor pursuant to this Contract (collectively referred to as "Works"), and the County shall be deemed the author thereof for all purposes. Such Works are deemed "works for hire," as defined in the U.S. Copyright Act, 17 U.S.C. § 101. Contractor shall, upon the request of the County, execute all papers and perform all other acts necessary to assist the County to obtain and register copyrights on such Works. If, for any reason, any of the Works do not constitute a "work made for hire," Contractor hereby irrevocably assigns to the County, in each case without additional consideration, all right, title, and interest throughout the universe in and to the works, including all copyrights therein.

17. AMENDMENTS

Any amendments to this Contract are only valid when reduced to writing, specifically identified as an amendment, and signed by both parties' Authorized Representative.

18. SEVERABILITY

The provisions of this Contract are severable. If any provision of this Contract is void, invalid, or unenforceable, it will not affect the validity and enforceability of the remainder of this Contract unless the void, invalid, or unenforceable provision substantially impairs the value of the entire Contract with respect to either party.

19. MERGER

19.1. Final Agreement. This Contract is the final expression of the agreement of the parties. This Contract is the complete and exclusive statement of the provisions agreed to by the parties. This Contract supersedes all prior negotiations, understandings, or agreements. There are no representations, warranties, or provisions, either oral or written, not contained herein.

19.2. Exhibits. The following Exhibits and addenda, including all attachments, are incorporated and made a part of this Contract:

Exhibit 1 – County's Request for SAMPLE (including Attachments SAMPLE)

Exhibit 2 - Contractor's Response to Request for SAMPLE dated SAMPLE

Exhibit 3 – Standard Assurance

Exhibit 4 – Insurance Terms

19.3. By signing this Contract, Contractor acknowledges receipt of all the above Exhibits and addenda, including all attachments. If there is a conflict between any provision of any Exhibit and any provision in the body of this Contract, the body of this Contract will prevail. To the extent reasonably possible, the Exhibits will be construed and constructed to supplement, rather than conflict with, the body of this Contract. If there is a conflict between any provision of an Exhibit and another Exhibit, the following is the order of precedence: Exhibit 1, Exhibit 2.

20. CONFIDENTIALITY

- 20.1. "Protected Data" has the same meaning as Not Public Data as defined in Minn. Stat. § 13.02, subd. 8a. Trade Secret Data as defined in Minn. Stat. § 13.37, subd. 1(b) shall be identified by Contractor to County and included in the definition of Protected Data.
- 20.2. For purposes of this Contract, all data created, collected, received, stored, used, maintained, or disseminated by Contractor in the performance of this Contract is subject to the requirements of the Minnesota Government Data Practices Act ("MGDPA"), Minn. Stat. Chapter 13 and its implementing rules, as well as any other applicable State or Federal laws on data privacy or security. Contractor must comply with, and is subject to, the provisions, remedies, and requirements of the MGDPA as if it were a governmental entity.
- 20.3. Contractor acknowledges that the County may transmit Protected Data to Contractor in connection with Contractor's performance of this Contract. Contractor shall not, at any time, directly or indirectly reveal, report, publish, duplicate, or otherwise disclose Protected Data to any third party in any way whatsoever, unless required or allowed by law. Contractor agrees to implement such procedures as are necessary to assure protection and security of Protected Data and to furnish the County with a copy of said procedures upon request.
- 20.4. Each party shall provide the other party with prompt Notice of a breach of the security of data as defined in Minn. Stat. § 13.055, subd. 1(a) or suspected breach of the security of data and shall assist in remedying such breach. Providing or accepting assistance does not constitute waiver of any claim or cause of action for breach of contract.
- 20.5. Contractor shall cooperate with the County in responding to all requests for data. Contractor does not have a duty to provide access to public data if the public data are available from the County, except as required by the provisions of this Contract. The parties shall promptly notify each other when any third party requests Protected Data related to this Contract or the Services. Contractor shall ensure that all subcontracts contain the same or similar data practices compliance requirements. All provisions of this Section apply to any subcontract or subcontractor.
- 20.6. This section survives expiration or termination of this Contract.

21. ELECTRONIC SIGNATURES

Each party agrees that the electronic signatures of the parties included in this Contract are intended to authenticate this writing and to have the same force and effect as wet ink signatures.

22. CONTRACT INTERPRETATION AND CONSTRUCTION

This Contract was fully reviewed and negotiated by the parties. Any ambiguity, inconsistency, or question of interpretation or construction in this Contract shall not be resolved strictly against the party that drafted the Contract. It is the intent of the parties that every section (including any subsection), clause, term, provision, condition, and all other language used in this Contract shall be constructed and construed so as to give its natural and ordinary meaning and effect.

23. WAGE WITHHOLDING TAX

Pursuant to Minn. Stat. § 270C.66, County shall make final payment to Contractor only upon satisfactory showing that Contractor and any subcontractors have complied with the provisions of Minn. Stat. § 290.92 with respect to withholding taxes, penalties, or interest arising from this Contract. A certificate by the Minnesota Commissioner of Revenue (Minnesota Department of Revenue Form IC-134, entitled "Withholding Affidavit for Contractors") satisfies this requirement with respect to the Contractor or subcontractor.

IN WITNESS WHEREOF, the parties hereto have executed this Contract on the date(s) indicated below.

COUNTY OF DAKOTA

By: SAMPLE

(Signature line)

SAMPLE

(Name, Title, Department)

SAMPLE

Date of Signature

Contract Number DCASAMPLE

CONTRACTOR

(I represent and warrant that I am authorized by law to execute this contract and legally bind the Contractor.)

By: SAMPLE
(Signature line)

SAMPLE
(Title)

SAMPLE
Date of Signature

ATTACHMENT E
INSURANCE TERMS

Contractor agrees to provide and maintain at all times during the term of this Contract such insurance coverages as are indicated herein and to otherwise comply with the provisions that follow. Such policy(ies) of insurance shall apply to the extent of, but not as a limitation upon or in satisfaction of, the Contract indemnity provisions. The provisions of this section shall also apply to all Subcontractors, Sub-subcontractors, and Independent Contractors engaged by Contractor with respect to this Contract, and Contractor shall be entirely responsible for securing the compliance of all such persons or parties with these provisions.

APPLICABLE SECTIONS ARE CHECKED



1. Workers Compensation. Workers' Compensation insurance in compliance with all applicable statutes including an All States or Universal Endorsement where applicable. Such policy shall include Employer's Liability coverage in an amount no less than \$500,000. If Contractor is not required by Statute to carry Workers' Compensation Insurance, Contractor agrees: (1) to provide County with evidence documenting the specific provision under Minn. Stat. § 176.041 which excludes Contractor from the requirement of obtaining Workers' Compensation Insurance; (2) to provide prior notice to County of any change in Contractor's exemption status under Minn. Stat. § 176.041; and (3) to hold harmless and indemnify County from and against any and all claims and losses brought by Contractor or any subcontractor or other person claiming through Contractor for Workers' Compensation or Employers' Liability benefits for damages arising out of any injury or illness resulting from performance of work under this Contract. If any such change requires Contractor to obtain Workers' Compensation Insurance, Contractor agrees to promptly provide County with evidence of such insurance coverage.



2. General Liability.

"Commercial General Liability Insurance" coverage (Insurance Services Office form title), providing coverage on an "occurrence" rather than on a "claims made" basis, which policy shall include, but not be limited to, coverage for Bodily Injury, Property Damage, Personal Injury, Contractual Liability (applying to this Contract), Independent Contractors, "XC&U" and Products-Completed Operations liability (if applicable). Such coverage may be provided under an equivalent policy form (or forms), so long as such equivalent form (or forms) affords coverage which is at least as broad. An Insurance Services Office "Comprehensive General Liability" policy which includes a Broad Form Endorsement GL 0404 (Insurance Services Office designation) shall be considered to be an acceptable equivalent policy form.

Contractor agrees to maintain at all times during the period of this Contract a total combined general liability policy limit of at least \$1,500,000 per occurrence and aggregate, applying to liability for Bodily Injury, Personal Injury, and Property Damage, which total limit may be satisfied by the limit afforded under its Commercial General Liability policy, or equivalent policy, or by such policy in combination with the limits afforded by an Umbrella or Excess Liability policy (or policies); provided, that the coverage afforded under any such Umbrella or Excess Liability policy is at least as broad as that afforded by the underlying Commercial General Liability policy (or equivalent underlying policy).

Such Commercial General Liability policy and Umbrella or Excess Liability policy (or policies) may provide aggregate limits for some or all of the coverages afforded thereunder, so long as such aggregate limits have not, as of the beginning of the term or at any time during the term, been reduced to less than the total required limits stated above, and further, that the Umbrella or Excess Liability policy provides coverage from the point that such aggregate limits in the underlying Commercial General Liability policy become reduced or exhausted. An Umbrella or Excess Liability policy which "drops down" to respond immediately over reduced underlying limits, or in place of exhausted underlying limits, but subject to a deductible or "retention" amount, shall be acceptable in this regard so long as such deductible or retention for each occurrence does not exceed the amount shown in the provision below.

Contractor's liability insurance coverage may be subject to a deductible, "retention" or "participation" (or other similar provision) requiring the Contractor to remain responsible for a stated amount or percentage of each covered loss; provided, that such deductible, retention or participation amount shall not exceed \$25,000 each occurrence.



Such policy(ies) shall name Dakota County, its officers, employees and agents as Additional Insureds thereunder.



3. Professional Liability. Professional Liability (errors and omissions) insurance with respect to its professional activities to be performed under this Contract. This amount of insurance shall be at least \$1,500,000 per occurrence and aggregate (if applicable). Coverage under such policy may be subject to a deductible, not to exceed \$25,000 per occurrence. Contractor agrees to maintain such insurance for at least one (1) year from Contract termination.

It is understood that such Professional Liability insurance may be provided on a claims-made basis, and, in such case, that changes in insurers or insurance policy forms could result in the impairment of the liability insurance protection intended for Dakota County hereunder. Contractor therefore agrees that it will not seek or voluntarily accept any such change in its Professional Liability insurance coverage if such impairment of Dakota County's protection could result; and further, that it will exercise its rights under any "Extended Reporting Period" ("tail coverage") or similar policy option if necessary or appropriate to avoid impairment of Dakota County's protection. Contractor further agrees that it will, throughout the one (1) year period of required coverage, immediately: (a) advise Dakota County of any intended or pending change of any Professional Liability insurers or policy forms, and provide Dakota County with all pertinent information that Dakota County may reasonably request to determine compliance with this section; and (b) immediately advise Dakota County of any claims or threats of claims that might reasonably be expected to reduce the amount of such insurance remaining available for the protection of Dakota County.

4. Automobile Liability. Business Automobile Liability insurance covering liability for Bodily Injury and Property Damage arising out of the ownership, use, maintenance, or operation of all owned, non-owned and hired automobiles and other motor vehicles utilized by Contractor in connection with its performance under this Contract. Such policy shall provide total liability limits for combined Bodily Injury and/or Property Damage in the amount of at least \$1,500,000 per accident, which total limits may be satisfied by the limits afforded under such policy, or by such policy in combination with the limits afforded by an Umbrella or Excess Liability policy(ies); provided, that the coverage afforded under any such Umbrella or Excess Liability policy(ies) shall be at least as broad with respect to such Business Automobile Liability insurance as that afforded by the underlying policy. **Unless included within the scope of Contractor's Commercial General Liability policy, such Business Automobile Liability policy shall also include coverage for motor vehicle liability assumed under this contract.**

Such policy, and, if applicable, such Umbrella or Excess Liability policy(ies), shall include Dakota County, its officers, employees and agents as Additional Insureds thereunder.

5. Additional Insurance. Dakota County shall, at any time during the period of the Contract, have the right to require that Contractor secure any additional insurance, or additional feature to existing insurance, as Dakota County may reasonably require for the protection of their interests or those of the public. In such event Contractor shall proceed with due diligence to make every good faith effort to promptly comply with such additional requirement(s).

6. Evidence of Insurance. Contractor shall promptly provide Dakota County with evidence that the insurance coverage required hereunder is in full force and effect prior to commencement of any work. At least 10 days prior to termination of any such coverage, Contractor shall provide Dakota County with evidence that such coverage will be renewed or replaced upon termination with insurance that complies with these provisions. Such evidence of insurance shall be in the form of the Dakota County Certificate of Insurance, or in such other form as Dakota County may reasonably request, and shall contain sufficient information to allow Dakota County to determine whether there is compliance with these provisions. At the request of Dakota County, Contractor shall, in addition to providing such evidence of insurance, promptly furnish Contract Manager with a complete (and if so required, insurer-certified) copy of each insurance policy intended to provide coverage required hereunder. All such policies shall be endorsed to require that the insurer provide at least 30 days' notice to Dakota County prior to the effective date of policy cancellation, nonrenewal, or material adverse change in coverage terms. On the Certificate of Insurance, Contractor's insurance agency shall certify that he/she has Error and Omissions coverage.

7. Insurer: Policies. All policies of insurance required under this paragraph shall be issued by financially responsible insurers licensed to do business in the State of Minnesota, and all such insurers must be acceptable to Dakota County. Such acceptance by Dakota County shall not be unreasonably withheld or delayed. An insurer with a current A.M. Best Company rating of at least A:VII shall be conclusively deemed to be acceptable. In all other instances, Dakota County shall have 15 business days from the date of receipt of Contractor's evidence of insurance to advise Contractor in writing of any insurer that is not acceptable to Dakota County. If Dakota County does not respond in writing within such 15 day period, Contractor's insurer(s) shall be deemed to be acceptable to Dakota County.

8. Noncompliance. In the event of the failure of Contractor to maintain such insurance and/or to furnish satisfactory evidence thereof as required herein, Dakota County shall have the right to purchase such insurance on behalf of Contractor, which agrees to provide all necessary and appropriate information therefor and to pay the cost thereof to Dakota County immediately upon presentation of invoice.

9. Loss Information. At the request of Dakota County, Contractor shall promptly furnish loss information concerning all liability claims brought against Contractor (or any other insured under Contractor's required policies), that may affect the amount of liability insurance available for the benefit and protection of Dakota County under this section. Such loss information shall include such specifics and be in such form as Dakota County may reasonably require.

10. Release and Waiver. Contractor agrees to rely entirely upon its own property insurance for recovery with respect to any damage, loss or injury to the property interests of Contractor. Contractor hereby releases Dakota County, its officers, employees, agents, and others acting on their behalf, from all claims, and all liability or responsibility to Contractor, and to anyone claiming through or under Contractor, by way of subrogation or otherwise, for any loss of or damage to Contractor's business or property caused by fire or other peril or event, even if such fire or other peril or event was caused in whole or in part by the negligence or other act or omission of Dakota County or other party who is to be released by the terms hereof, or by anyone for whom such party may be responsible.

Contractor agrees to effect such revision of any property insurance policy as may be necessary in order to permit the release and waiver of subrogation agreed to herein. Contractor shall, upon the request of Dakota County, promptly provide a Certificate of Insurance, or other form of evidence as may be reasonably requested by Dakota County, evidencing that the full waiver of subrogation privilege contemplated by this provision is present; and/or, if so requested by Dakota County, Contractor shall provide a full and complete copy of the pertinent property insurance policy(ies).

K/CM/Exh/Insure-Prof-Liability-CM.doc

Revised: 10/07

Attachment F
STANDARD ASSURANCES

1. **NON-DISCRIMINATION**. During the performance of this Contract, the Contractor shall not unlawfully discriminate against any employee or applicant for employment because the person is a member of a protected class under, and as defined by, federal law or Minnesota state law including, but not limited to, race, color, creed, religion, sex, gender, gender identity, pregnancy, national origin, disability, sexual orientation, age, familial status, marital status, veteran's status, or public assistance status. The Contractor will take affirmative action to ensure that applicants are employed and that employees are treated during employment without unlawful discrimination.. Such action shall include, but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices which set forth the provisions of this nondiscrimination clause.

The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of Contractor, state that all qualified applicants will receive consideration for employment without regard to race, creed, color, religion, sex, national origin, disability, sexual orientation, age, marital status, veteran's status, or public assistance status.

No funds received under this Contract shall be used to provide religious or sectarian training or services.

The Contractor shall comply with any applicable federal or state law regarding non-discrimination. The following list includes, but is not meant to limit, laws which may be applicable:

A. The Equal Employment Opportunity Act of 1972, as amended, 42 U.S.C. § 2000e *et seq.* which prohibits discrimination in employment because of race, color, religion, sex, or national origin.

B. Equal Employment Opportunity-Executive Order No.11246, 30 FR 12319, signed September 24, 1965, as amended, which is incorporated herein by reference, and prohibits discrimination by U.S. Government contractors and subcontractors because of race, color, religion, sex, or national origin.

C. The Rehabilitation Act of 1973, as amended, 29 U.S.C. § 701 *et seq.* and 45 C.F.R. 84.3 (J) and (K) implementing Sec. 504 of the Act which prohibits discrimination against qualified handicapped persons in the access to or participation in federally-funded services or employment.

D. The Age Discrimination in Employment Act of 1967, 29 U.S.C. § 621 *et seq.* as amended, and Minn. Stat. § 181.81, which generally prohibit discrimination because of age.

E. The Equal Pay Act of 1963, as amended, 29 U.S.C. § 206(d), which provides that an employer may not discriminate on the basis of sex by paying employees of different sexes differently for the same work.

F. Minn. Stat. Ch. 363A, as amended, which generally prohibits discrimination because of race, color, creed, religion, national origin, sex, marital status, status with regard to public assistance, disability, sexual orientation, or age.

G. Minn. Stat. § 181.59 which prohibits discrimination against any person by reason of race, creed, or color in any state or political subdivision contract for materials, supplies, or construction. Violation of this section is a misdemeanor and any second or subsequent violation of these terms may be cause for forfeiture of all sums due under the Contract.

H. Americans with Disabilities Act of 1990, 42 U.S.C. §§ 12101 through 12213, 47 U.S.C. §§ 225, 611, with regulations at 29 C.F.R. § 1630, which prohibits discrimination against qualified individuals on the basis of a disability in term, condition, or privilege of employment.

I. Title VI of the Civil Rights Act of 1964, 42 U.S.C. 2000d, *et seq.* and including 45 CFR Part 80, prohibits recipients, including their contractors and subcontractors, of federal financial assistance from discriminating on the basis of race, color or national origin which includes not discriminating against those persons with limited English proficiency.

J. The Pregnancy Discrimination Act of 1978, which amended Title VII of the Civil Rights Act of 1964, 42 U.S.C. §§ 2000e *et seq.* which prohibits discrimination on the basis of pregnancy, childbirth, or related medical conditions.

K. Equal Protection of the Laws for Faith-based and Community Organizations-Executive Order No. 13279, signed December 12, 2002 and as amended May 3, 2018. Prohibits discrimination against grant seeking organizations on the basis of religion in the administration or distribution of federal financial assistance under social service programs, including grants and loans.

L. Vietnam Era Veterans' Readjustment Assistance Act of 1974, as amended, 38 U.S.C. 4212, with regulations at 41 C.F.R. Part 60-250, which prohibits discrimination in employment against protected veterans.

2. **DATA PRIVACY.** For purposes of this Contract, all data created, collected, received, stored, used, maintained, or disseminated by Contractor in the performance of this Contract are subject to the requirements of the Minnesota Government Data Practices Act, Minn. Stat. Ch. 13, ("MGDPA") and the Minnesota Rules implementing the MGDPA. Contractor must comply with the MGDPA as if it were a governmental entity. The remedies in Minn. Stat. § 13.08 apply to the Contractor. Contractor does not have a duty to provide access to public data to a data requestor if the public data are available from the County, except as required by the terms of this Contract. If Contractor is a subrecipient of federal grant funds under this Contract, it will comply with the federal requirements for the safeguarding of protected personally identifiable information ("Protected PII") as required in the Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards, 2 CFR Part 200, and the County Protected PII procedures, which are available upon request. Additionally, Contractor must comply with any other applicable laws on data privacy. All subcontracts shall contain the same or similar data practices compliance requirements.

3. **RECORDS DISCLOSURE/RETENTION.** Contractor's bonds, records, documents, papers, accounting procedures and practices, and other evidences relevant to this Contract are subject to the examination, duplication, transcription, and audit by the County and either the Legislative or State Auditor, pursuant to Minn. Stat. § 16C.05, subd. 5. Such evidences are also subject to review by the Comptroller General of the United States, or a duly authorized representative, if federal funds are used for any work under this Contract. The Contractor agrees to maintain such evidences for a period of six (6) years from the date services or payment were last provided or made or longer if any audit in progress requires a longer retention period.

4. **WORKER HEALTH, SAFETY AND TRAINING.** Contractor shall be solely responsible for the health and safety of its employees in connection with the work performed under this Contract. Contractor shall make arrangements to ensure the health and safety of all subcontractors and other persons who may perform work in connection with this Contract. Contractor shall ensure all personnel of Contractor and subcontractors are properly trained and supervised and, when applicable, duly licensed or certified appropriate to the tasks engaged in under this Contract. Each Contractor shall comply with federal, state, and local occupational safety and health standards, regulations, and rules promulgated pursuant to the Occupational Health and Safety Act which are applicable to the work to be performed by Contractor.

5. **PROHIBITED TELECOMMUNICATIONS EQUIPMENT/SERVICES.** If Contractor is a subrecipient of federal grant funds under this Contract, Contractor certifies that, consistent with Section 889 of the John S. McCain National Defense Authorization Act for Fiscal Year 2019, Pub. L. 115-232 (Aug. 13, 2018) (the "Act"), and 2 CFR § 200.216, Contractor will not use funding covered by this Contract to procure or obtain, or to extend, renew, or enter into any contract to procure or obtain, any equipment, system, or service that uses "covered telecommunications equipment or services" (as that term is defined in Section 889 of the Act) as a substantial or essential component of any system or as critical technology as part of any system. Contractor will include this certification as a flow down clause in any agreement related to this Contract.

6. **CONTRACTOR GOOD STANDING.** If Contractor is not an individual, Contractor must be registered to do business in Minnesota with the Office of the Minnesota Secretary of State and shall maintain an active/in good standing status with the Office of the Minnesota Secretary of State, and shall notify County of any changes in status within five calendar days of such change. Business entities formed under the laws of a jurisdiction other than Minnesota must maintain a certificate of authority (foreign corporations, limited liability companies, limited partnerships, and limited liability limited partnerships), or a statement of foreign qualification (foreign limited liability partnerships), or a statement of partnership authority (general partnerships). See Minn. Stat. §§ 303.03 (corporations); 322C.0802 (limited liability companies); 321.0902 and 321.0907 (foreign limited partnership); 321.0102(7) (foreign limited liability limited partnerships); 323A.1102(a) (foreign limited liability partnership); 321.0902 and 321.0907 (foreign general partnerships).

7. **CONTRACTOR DEBARMENT, SUSPENSION, AND RESPONSIBILITY CERTIFICATION.** Federal Regulation 45 CFR 92.35 prohibits the State/Agency from purchasing goods or services with federal money from vendors who have been suspended or debarred by the federal government. Similarly, Minn. Stat. § 16C.03, subd. 2 provides the Commissioner of Administration with the authority to debar and suspend vendors who seek to

contract with the State/Agency. Vendors may be suspended or debarred when it is determined, through a duly authorized hearing process, that they have abused the public trust in a serious manner.

By signing this Contract, the Contractor certifies that it and its principals* and employees:

A. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from transacting business by or with any federal, state, or local governmental department or agency; and

B. Have not within a three (3) year period preceding this Contract: 1) been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (federal, state, or local) transaction or contract; 2) violated any federal or state antitrust statutes; or 3) committed embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property; and

C. Are not presently indicted or otherwise criminally or civilly charged by a governmental entity for: 1) commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (federal, state, or local) transaction; 2) violating any federal or state antitrust statutes; or 3) committing embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property; and

D. Are not aware of any information and possess no knowledge that any subcontractor(s) that will perform work pursuant to this Contract are in violation of any of the certifications set forth above; and

E. Shall immediately give written notice to the Authorized Representative should Contractor come under investigation for allegations of fraud or a criminal offense in connection with obtaining, or performing a public (federal, state, or local government) transaction; violating any federal or state antitrust statutes; or committing embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property.

*“Principals” for the purposes of this certification means officers; directors; owners; partners; and persons having primary management or supervisory responsibilities within a business entity (e.g. general manager; plant manager; head of a subsidiary, division, or business segment and similar positions).

8. **PREVAILING WAGES.** Contractor shall pay wages to its employees at a rate not less than those established by the Minnesota Department of Labor & Industry for commercial construction projects. In accordance with Minn. Stat. § 471.345, subd. 7 and Dakota County Board Resolution No. 95-55.

9. **BOND FOR G/HVACR CONTRACTORS.** In accordance with Minn. Stat. § 326B.197, if Contractor will be performing any work having to do with gas, heating, ventilation, cooling, air conditioning, fuel burning or refrigeration, the Contractor must give bond to the State of Minnesota for the benefit of persons suffering financial loss by reason of Contractor’s failure to comply with the requirements of the State Mechanical Code.

Directions for Online Access to Excluded Providers

To ensure compliance with this regulation, identification of excluded entities and individuals can be found on the Office of Inspector General (OIG) website at https://oig.hhs.gov/exclusions/exclusions_list.asp

DAKOTA COUNTY

Capital Projects Management, 1590 Highway 55, Hastings, MN 55033, 651.438.4350 jay.biedny@co.dakota.mn.us

DAKOTA COUNTY HIGH PERFORMANCE DESIGN AND CONSTRUCTION STANDARDS

"A" indicates Appendix, "E" indicates Energy Efficiency Item, "s" indicates a sustainability standard

CSI	Section	Item	A	E	s	Standard	Reference	Additional Comments
GNRL.1	All	General - County Vision			s	To be a Premier County in which to live and work.		Provide efficient, effective, responsive government.
GNRL.2	All	General - CPM Goal		E	s	To provide leadership in the planning, design, construction, operation and maintenance of cost effective and energy efficient high performance and sustainable buildings in Dakota County.		Standards are to be implemented on all County projects unless authorized otherwise by the CPM Project Manager or the Capital Projects Manager.
GNRL.3	All	General - FM Mission & Goals		E	s	FM's mission is to focus on occupant comfort, maintenance efficiency and energy efficiency.		Facility design should reflect County mission and goals.
QUAL.1	All	Quality Assurance and Quality Control (QA/QC)	A		s	To assure the Citizens and Board of Commissioners of Dakota County that the construction and workmanship used for all County buildings strictly adheres to established design, engineering, material, quality control and sustainability standards.		Establish quality control team - Owner / Designer / Engineers / Contractors / Inspection and Testing. Establish minimum standards of quality, cradle-to-grave requirements for durability and reuse, selection and specification of materials, independent review and analysis, and value determination of all systems and materials selected.
QUAL.2	All	Quality			s	Characteristics of a product, project or service that bear on its ability to satisfy specified, stated or implied needs and be free of defects or deficiencies.		Where approved Manufacturers are shown - this establishes a minimum level of quality that must be equaled or exceeded to be considered for use in any project.
QUAL.3	All	Quality Control			s	Critical construction work will be independently inspected periodically and construction materials will be sampled and tested for compliance with these standards, project specifications and relevant industry standards.		Inspection and testing agencies submit written test reports directly to County for all site visits, observations, samples and tests. Weekly or biweekly Owner construction meetings are held with Architect, Engineers, Contractor, major subcontractors, and independent inspection and testing services to review progress, schedule and QA/QC. County maintains photographic record of critical construction stages.
QUAL.4	All	Quality Audit		E	s	A systematic, independent examination and review will be conducted on all major projects to determine whether quality activities and related results comply with stated project objectives and criteria and whether they are implemented effectively and responsibly to achieve planned outcomes. These may include a recommissioning process for mechanical and electrical within the first 5 years of project completion.		"Post - occupancy inspections" are performed annually or more often as conditions warrant for critical areas including building envelope and roofs. Written verification is established that all design and sustainability requirements have been achieved and maintained. MN B3 and/or EPA ENERGY STAR PROGRAM will be used to benchmark and track energy efficiency beginning at time of County occupancy of the facility.
QUAL.5	All	QA/QC Materials Inspection and Testing.			s	Materials sampling and testing of soils, concrete, steel, pavement, masonry and all other critical building materials and components are by certified, independent professional testing company and laboratory.		Testing firms will be selected off term contract or project specific contract tender.
QUAL.6	All	QA/QC Exterior Building Envelope Inspection and Testing.	A	E	s	Inspection, sampling and testing of steel supports, flashings, masonry, stone, precast stone/concrete, windows, terminations and sealants will be performed by or under the direction of a Licensed Professional Engineering Design and Masonry Inspection Consultant		Appendix includes a sample RFP for envelope consulting services.
QUAL.7	All	QA/QC Roofing Systems Inspection and Testing.	A	E	s	Inspection, sampling and testing of roofing membranes, insulation, terminations, flashings, counter flashings, cap flashings, penetrations, drainage and overflow scuppers by or under the direction of Registered Professional Roof Design and Inspection Consultant.		3rd party "on-site" inspection will be provided by Owner during the roof system installation. Owner will perform thermographic evaluation within one year of roof installation.

CSI	Section	Item	A	E	S	Standard	Reference	Additional Comments
QUAL.8	All	QA/QC Indoor Air Quality		E	S	Final random sampling, testing, balancing to confirm correct air exchange rates, filtration, volume, pressure, and temperature control by a professional, independent testing and balancing agency.		All testing, balancing and functional performance testing is included in the project documents to be performed by and at the expense of the General/Mechanical contractors. Quality Assurance sampling and testing is performed during the new building commissioning or near the end of any renovation project to confirm systems meet or exceed design criteria.
DESIGN.1	All	Energy Conservation		E	S	Inserted here as reference. International Building Energy Code and ASHRAE Energy Efficiency Standards are to be used as the base upon which to build maximum building energy efficiency.	IBEC, ASHRAE Energy Efficiency Standards	Included in respective line items.
DESIGN.2	All	Space & Furniture Standards	A		S	County space standards are separate standards and are fully included here by reference. Space standards are County policy document #4401. Furniture standards are current "Dakota County Adjustable Workstation Guidelines".	County Policy #4401	Space standards are used for all interior design and program efforts. Each project must resolve in it's program how to accommodate specialty and common use space and amenities.
DESIGN.3	All	Design for the Future		E	S	The flexibility to adjust to alterations easily must be designed into the building for all new construction since the use of the County buildings will change with County department missions and growth patterns.		Electrical and communications systems will be designed and sized to provide ample capacity for increased load concentrations in the future and to permit modifications to be made in one area without causing major disruptions in other areas of the facility.
DESIGN.4	All	Integration of Architectural and Engineering Disciplines			S	To ensure that the design of new County facilities and renovations are equipped with the latest in structural, office and communication technology and in addition are prepared for the evolution of these systems, all County building designs require that a higher level of integration between architecture and engineering systems be achieved than what is usually expected in the industry for office buildings. The AutoDesk Revit® form of BIM may be used to accomplish integration and coordination of design disciplines for construction of County building projects.		Focus design elements and systems on building envelope details, seismic considerations, and PREBID coordination of mechanical, electrical, communication, safety, security and special systems. Refer to submission requirements provided by the Owner for various stages of each project.
DESIGN.5	All	Exterior Wall Construction	A			All new exterior wall construction shall either be precast or brick/block cavity wall construction. Parapet tops shall be prefinished metal flashing; natural or cast stone caps are not allowed. Precast stone window sills are encouraged. Interior window sills shall be solid surface. Interior finish of exterior wall to be paint; no wall covering is allowed on exterior walls. All metal studs or furring must be vertical to facilitate fishing of electrical at a later time.		Alternate methods only allowed with approval of the Capital Projects Manager. See appendix provided typical roof and envelope details historically used as a "standard" on County building designs.
DESIGN.6	All	Bathroom General Design				The County generally employs traditional multi-user restrooms. Single-user restrooms are employed in special circumstances which include: immediate access directly from a dedicated office (Judge's chambers, Deputy post at Point of Entry, etc.); Family restrooms required by programming (as at a Library); or when adding fixture counts and only one more of each sex is required. The children's area at libraries often contains a separate single-user restroom with child-sized fixtures (mounting heights as well) and accessories. Greenway trailhead buildings employ at least two single-user restrooms per building.		Accessibility requirements in every toilet room are very important. All mounting heights for hardware, clearances, accessories, etc. have to meet Federal ADA and often more restrictive State requirements.

CSI	Section	Item	A	E	S	Standard	Reference	Additional Comments
DESIGN.7	All	Bathroom Accessories				Soap dispensers, toilet paper dispensers and other bathroom accessories may be provided by the Owner, but must be shown and noted as such on the documents so as that their locations are correctly anticipated. The designer should verify any Owner provided bathroom accessories with the Owner during Design Development. The County uses two methods to dry your hands: electric hand dryers and wall-dispensed paper towels. Generally, every toilet room should have both towel and electric hand dryer options.		The County treats paper hand towels as compostable waste, and so it must be collected separately from trash that will go to a landfill. As such, two separate free-standing receptacles are needed for waste in EVERY restroom design. Also, special consideration should be given on the wall type and other acoustical measures to be taken so that noise is contained from adjacent spaces.
DESIGN.8	All	Casework / Cabinetry Design & Countertops				Casework is used at the County in workrooms and kitchen areas. In work rooms, base and upper cabinets are the norm with plastic laminate tops. Wet location countertops are to be quartz. The base may contain drawers as needed. All shelf areas are covered with doors. Corian Solid Surface can be used for window sills only.	See "123600" for additional material details	In work areas the base cabinet nearest to the copier must contain one section configured so that boxes of paper can be slid into them while staying on the floor (no lifting when loading cabinets). This will involve special detailing of the toe space. Kitchen surfaces need to be long enough to accommodate a microwave (per ADA) or preferably one under the counter (in a cubby with a solid surface or p-lam base). Selections should be limited to the lower half of the cost levels.
DESIGN.9	All	Energy Code Compliance				Current energy code requires special focus on the monitoring or control of electrical plug loads. Multiple options are often available to accomplish these goals. The selection of the right answer for a project may effect the other energy code issues on the project and therefor need to be discussed early in the design process.		This issue, along with other energy code issues must be resolved and approved by the Owner before Design Development is complete.
DESIGN.10	All	Fall Protection (off roof)				Fall protection shall be incorporated into the design where any roof drains or equipment are located within 15' of the roof edge. Alternatives to fall protection may include a parapet at sufficient height/design such that it acts as a leading edge guardrail/wall.		Reference the County-Wide Fall Protection Study completed in 2018 for more detail. If a project contractor moves or modifies the existing fall protection, then it must be reinstalled upon project completion.
DESIGN.11	All	Reach Accessibility				Any equipment that has valves, gauges, meters or some form of monitoring or operation must be within 6'-0" above finished floor (AFF). Any equipment access or reach accessibility that exceeds this must either be remotely repeated to a lower/accessible height, or a permanent fall protection compliant system must be provided.		This will require a detailed review by the Mechanical and Electrical Engineering Team before the project is bid.
DESIGN.12	All	Handicapped / ADA Study				The County completed a County-Wide Accessibility Audit in 2018, that produced a barrier removal plan. Reference the plan for deficiencies to be removed in the needs of future projects.		All applicable codes must be meet. State accessibility requirements are often more restrictive than the Federal ADA guidelines. Accessibility audit is only the first step in compliance. Designer of record is responsible for all current compliance.
DESIGN.13	All	Networked Systems				Systems requiring internet or other connections to the County's network system need to be vetted through the Information Technology department very early in the design process so that product decisions can be made well in advance to ensure interoperability. This applies to internet based software, anything requiring an IP address and/or other connection to or through the County's data network.		Systems known to require special handling in this regard include, but are not limited to the following: Building Automation System (BAS) / Energy Management System (EMS) computers, card access systems, camera systems, lighting control systems and audio/visual systems.
DESIGN.14	All	Interior Lighting Controls				County building designs rely heavily on LED fixtures. This technology lends itself to very complex control down to the fixture. The light fixtures and all facets of controls need to be presented and approved before Design Development can be considered complete. Systems are not to be performance specified. Rather, individual products and systems are required as a basis of design.	Products Similar to: Wattstopper DLM; Lutron; Intelligent Lighting Controls (ILC)	A dedicated control system for building interior spaces is required which meets current energy code requirements. In addition, separate controls for complex meeting rooms with integrated audio visual control is also needed. Power Over Ethernet (POE) systems for lighting fixtures and lighting controls are not used at the County. See also "Conference Room Design & Construction Guidelines" appendix within standard "DESIGN.16" for additional information.

CSI	Section	Item	A	E	S	Standard	Reference	Additional Comments
DESIGN.15	All	Exterior Lighting Controls				The County prefers to have remote access to all exterior lighting, especially parking area lighting. This allows building management to make quick, remote changes to evening hour operations without traveling to the individual building.		Exterior lighting control is separate from the building interior lighting control. It usually runs through a set of contactors which, in turn, are controlled by the Building Automation System (BAS). In buildings without BAS control, the contactors are controlled by astronomical time clocks and/or photocells.
DESIGN.16	All	Conference Room Design & Construction	A			The County has created a set of guideline standards for the design and construction of conference spaces. Any new or renovated meeting spaces created in a project should follow these guidelines.		See "Conference Room Design & Construction Guidelines" appendix.
DESIGN.17	All	Vehicle Wash Bay General Design				The County desires to apply additional durability to the design of any vehicle wash bays. This includes the use of epoxy rebar and a corrosion inhibitor admixture (consider MCI's "MCI-2005 NS") within all slab-on-grade floors, enhancement of the paint coatings used for steel framing/decking (consider Sherwin-Williams "Macropoxy 646 FC Polyamide Epox Semi-Gloss"), and the enhancement of any paint coatings used on precast walls (see additional comments).		For precast walls, consider these 4-step Sherwin-Williams products: 1) Apply "Steel-Seam FT910" epoxy patching compound to all larger bug holes in precast. 2) Apply "Kem Cati-Coat HS" primer to all precast walls. 3) Coat all precast walls with "Tile-Clad HS" two-component epoxy polyamid coating. 4) Coat all precast walls with "Hi-Solids Polyurethane" two-component aliphatic polyurethane finish coating in white.
DESIGN.18	All	Parapet Heights				New construction parapets should be 42" above the roof surface so as not to require fall protection.		
DESIGN.19	All	Roof Structural Capacity				New construction roofs shall be designed for a flat roof snow load of 40 PSF min. and a thermal factor of not less than 1.1.	See also Standard #52100 - "Steel Roof Joists"	Although this is may be beyond code requirements, this is driven by FM Global Property Loss Prevention Data Sheet 1-54 Roof Loads for New Construction (County's insurance carrier).
GBI.1	GBI Title	Green Buildings Initiative - GBI	A	E	S	Sustainable buildings initiative is applied across all construction items to promote cost-effective waste reduction, including the purchase of environmentally preferable, recycled-content, renewable and sustainable products; and to incorporate waste prevention and recycling in the daily operations. It is the intent of Dakota County to use wherever possible - materials that demonstrate re-use, recycling or reduction of raw materials and energy during manufacturing. Sustainability guidelines adopted in 2001 edition of these standards are incorporated throughout by reference here. It is the intent to fully incorporate sustainability guidelines into these standards.		Inclusion of materials is upon a case by case basis into these Standards and dependent upon approval and project funding of initial and life/cycle cost impacts as part of the design cost evaluation during the design development process. Use current Minnesota B3 Guidelines (https://www.b3mn.org) and Greening Federal Facilities Resource Guides (www.eere.energy.gov) for current information and evolving recommendations. Consider use of the LEED - Leadership in Energy and Environmental Design Green Building Rating System to evaluate and improve environmental and economic performance of new buildings by the US Green Building Council (LEED-EB for existing building additions and renovations), BEES - Building for Environmental and Economic Sustainability (https://www.nist.gov/services-resources/software/bees/) National Institute of Standards and Technology for material selections. Also see EPA Environmentally Preferable Purchasing Program (www.epa.gov/opptintr/EPP) and STATE of MN EPP Guide (http://www.rethinkrecycling.com/government/eppg). Ensure that energy efficiency is addressed in electronic devices and manufacturing processes.
GBI.2	GBI Planning	Regional/Dakota County Solid Waste Master Plan 2018-2038 (06/11/2018)	A		S	The Dakota County Design Construction Sustainability Design Standards are required in County capital building projects to reduce waste generation, increase reuse and recycling, and minimize the County's environmental foot print. Reference the County's 2018-2038 Solid Waste Master Plan, available from the County's Environmental Reports & Studies webpage.	2018-2038 Solid Waste Master Plan	1. Dakota County will conduct post-occupancy evaluations for County buildings constructed using the Dakota County Design Construction Sustainability Standards. 2. Continue to use and update, as necessary, the County's Design, Construction, Sustainability Standards and the Minnesota Sustainable Design Guidelines in County construction, deconstruction, or remodeling projects, and revise Standards to apply to a broader range of building projects. 3. Provide public entities information on opportunities to incorporate sustainable architectural guidelines in the planning process for construction, deconstruction, or remodeling of public facilities.

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GBI.3	GBI Planning	Site			s	Consider regional impacts for the proposed development on natural and manmade systems such as surface drainage, geology, vegetation, topography, transportation, infrastructure and historical development patterns, and determine methods to reduce or eliminate negative impacts.		Include into the design process other County and/or State agencies as required for proper site design including water and natural resource management.
GBI.4	GBI Planning	Voluntary Carbon Standard		E	s	Specification for project-level quantification, monitoring and reporting as well as validation and verification of greenhouse gas (GHG) emission reductions and removals. Goal is GHG neutral design and construction.		Requires benchmarking and record keeping along preset criteria determined by Owner, Federal and State regulations.
GBI.5	GBI Planning	Energy Conservation Primary Goal		E	s	Optimize Building or Project Energy Performance. County Board goal - benchmark and measure the energy efficiency of County buildings.		Document energy design effectiveness against energy code.
GBI.6	GBI Planning	Energy Conservation Utilize Utility Programs		E	s	Contact Xcel Energy (NSP) , Dakota Electric, Center Point Energy, Minnesota Energy Resources and other energy utilities to research alternative funding sources through audits, rebates, loans, grants, design tools or technical assistance for new buildings and renovations.		Current Xcel Energy program - "Energy Solutions for Business" which includes computer modeling, consulting services, rebates and interactive tools for new projects for buildings 20,000 square feet and larger. XCEL Energy also funds energy conservation studies up to 50% and \$25,000 maximum. Verify each case with Xcel account rep for current programs. Dakota Electric offers their "Energy Wise" program with experts providing services similar in scope to Xcel with consulting, grants, and loans. Know that if any peak load shedding is explored for a project, that PDD leadership needs to be engaged. Modifications to existing generators and filing of necessary air emission permits may become necessary with peak shaving use on any generators.
GBI.7	GBI Planning	Energy Conservation Life Cycle Cost Prediction		E	s	Establish overall budget for building design and operations. Account for equipment cost and operating cost and energy over the expected life of the building and consider/provide mechanisms for shifting some energy costs outside construction budget.		Commercial industry standard is 20 year. County uses 50 year life cycle except on mechanical and electrical systems with 20-30 year life cycles. Include time of day tier rate or peak vs. off peak analysis. Life cycle cost analysis will use future increased utility costs as part of the ROI and payback calculations.
GBI.8	GBI Planning	Energy Conservation Energy Design Teaming		E	s	Establish energy design team. Include Project Manager, Architect, Electrical and Mechanical Engineers, special consultants, Utility Companies, Operations Management Director, Facilities Management and Information Technology Director.		On major new building construction (5,000 SF or greater) , consider use of lighting designer or daylighting specialists. Evaluate case by case for application to renovation projects.
GBI.9	GBI Planning	Energy Conservation Climate Analysis		E	s	Collect pertinent information on climate such as temperature, humidity, solar inclination, wind and weather patterns.		Historical information is readily available from the National Weather Service. In addition there are numerous on-line fee for service firms that provide heating/cooling degree information in readily useable format.
GBI.10	GBI Planning	Energy Conservation Micro-Climate Analysis		E	s	Analyze impact of local micro-climate such as landforms, lakes, vegetation, adjacent buildings, industry and groundcover .		All issues to be addressed during site development project phase.
GBI.11	GBI Planning	Energy Conservation Alternative Parking		E	s	Provide conveniently located reserved parking for motorcyclists, carpool and alternative fuel vehicles.		Propane or electric trucks and autos only. Consider requirements as new technologies develop; i.e. 240 volt / 40A for new County vehicles (PHEV). New and major renovation projects must include provisions to install electric charging stations. Station provided by Fleet Management outside of the project budget (conduit/wire and foundation within project).
GBI.12	GBI Planning	Equipment Noise Control				Provide all required design provisions and signage for exterior and interior spaces exceeding code referenced sound levels.		
GBI.13	GBI Planning	Indoor Air Quality Interior pollutants			s	Identify any planned facility activities, equipment or materials that may impact indoor air quality such as vehicle storage, copy center or supply storage.		Deal appropriately with anticipated materials.
GBI.14	GBI Planning	Indoor Air Quality Exterior Pollutants			s	Define the impact that existing and future local developments may have upon the air quality in and around the County facility.		Evaluate the need for CO & CO2 detection.

CSI	Section	Item	A	E	s	Standard	Reference	Additional Comments
GBI.15	GBI Planning	Indoor Air Quality Underground Pollutants				Evaluate on-site sources of contamination in soil and ground water such as radon, volatile organic compounds or solid waste. Follow MN Pollution Control Agency Rule 7080 for subsurface sewage treatment systems or solid waste and Rule 7150 for underground storage tanks.	MPCA Rule 7080 MPCA Rule 7150	Example: Radon in limestone foundations; past fuel storage tank or other underground contamination sources, brownfield restoration, or on-site sewage or water systems at end of life, etc. CPM Project Manager should consult with Risk Management and Environmental Resources on any positive results and mitigation measures.
GBI.16	GBI Planning	Indoor Air Quality Air Intake Locations				Locate building fresh air intakes a minimum of 50' from property lines, driveways, streets, highways, loading docks and vehicle parking; 50' from wet cooling towers and air exhausts; 20' above landscaped grade; 24" above finished roof grade and 25' from boiler stacks and exhaust fans. Locate all intakes on or above roofs in structural penthouses.		Locate fresh air intakes consistent with prevailing wind directions as published by the National Weather Service to minimize effects of exhaust drift from boiler stacks, cooling towers and building exhausts.
GBI.17	GBI Planning	Indoor Air Quality Air Treatment				Assess the impact of outside air quality upon the design of air filtration and treatment.		Example - Use of HEPA banks in areas with high particulate count. This will also impact the volume and capacity of the air handling system, air exchange rates and carbon dioxide monitoring/control.
GBI.18	GBI Planning	Indoor Air Quality Mechanical System Commissioning	A			Commissioning using ASHRAE as guidelines.		Use current copy of the ASHRAE commissioning guidelines.
GBI.19	GBI Planning	Water Conservation Greywater Systems				Explore a greywater system to collect water from roofs, sinks and showers, and reuse for toilet flushing or irrigation if local code and project budget permits.		Dakota County follows the MN State Building code. Special variance by local jurisdiction is needed to implement this type of system. The Spring Lake Gathering Center received special permission (with restrictions) from State Dept. of Health for rainwater to flush toilets. This system is no longer in use due to high maintenance cost.
GBI.20	GBI Planning	Water Conservation Onsite Waste Treatment				Explore waste treatment using biological systems such as constructed wetland instead of municipal wastewater treatment plant.		Example: New highway shop outside existing metro or local municipal sanitary and storm collection systems. Prove practicality for use in zoned and existing waste collection areas. State Law Does Not permit in MUSA.
GBI.21	GBI Planning	Waste Reduction Existing Buildings Use				When planning new buildings, consider the reuse and renovation of existing structures instead of building, purchasing temporary and/or demolishing old.		Use existing structures if possible as temporary facilities during construction phase.
GBI.22	GBI Planning	Waste Reduction Demolition				For buildings being demolished, establish aggressive goals to recycle or salvage as much as possible. Target 75%		Use Deconstruction or moving approaches, versus Demolition methods and Contractor incentives to achieve compliance.
GBI.23	GBI Planning	Waste Reduction Program Adequate Recycling Space				Identify materials to be recycled such as paper, aluminum, glass, plastic bottles, cardboard, and food waste. Allocate space for recycling for each floor or area in addition to required space at loading dock.		Integrate recycling containers into convenient locations and build into millwork where possible to maintain housekeeping of work areas. Use "3" container system for waste/landfill; recycle (paper, plastic, etc.); and organics. Specific recycling specifications and procedures need to be developed with Operations.
GBI.24	GBI Planning	Waste Reduction Construction Goals				Program and continue existing County Construction recycling initiative. Project Manager will evaluate local firms compliance with 50% or greater recycled (non-landfilled) goal for each project.		Target is to reach 50% goal of non-landfilled waste. Need to resolve actual recycled amount versus "alternative daily cover" used by recycling firms. Hauler's reports for actual recycled content are required for each project.
GBI.25	GBI Design Phase	GBI - Site Considerations				Preserve ecologically significant and/or sensitive areas of vegetation, wildlife habitat and topography.		Recognize during site selections that location of site in developed areas may not be conducive to application of sustainable site guidelines.
GBI.26	GBI Design Phase	GBI - Site Green Spaces				Provide green space, minimize area of site dedicated to building, parking, and access roads.		Consult with Soil & Water Conservation District (SWCD) concerning site development intensity. Maximize open space - be as inclusive as possible.

CSI	Section	Item	A	E	s	Standard	Reference	Additional Comments
GBI.27	GBI Design Phase	GBI - Site Water Retention	A		s	Use Dakota County Best Management Practices (BMP) for rainwater. Comply with all National Pollutant Discharge Elimination System (NPDES) requirements. Retain stormwater on site instead of discharging into storm sewers. Use permeable surfaces and limit the amount of impervious surfaces such as parking areas to allow rainwater to infiltrate and remain on site. Use additional innovative site practices whenever feasible. (See Appendix example - Model Vermillion River Watershed - VRWJPO Standards additional other resources and references.) PM to check local city and watershed stormwater ordinances in addition to the MPCA requirements.	Dakota County BMP's MPCA website	Fully comply with NPDES Stormwater Permit for Construction Activity - see MPCA website. Separate construction permit is required for one or more acre of project area. Permit is not required to resurface parking lots, but is required if pavement is completely removed and base regraded. For any major new project site improvements: Dakota County's Environmental Resources (ER) Department will be consulted during the following project phases: end of Schematic Design (basically a notice the project is starting), Design Development and 50% Construction Documents to ensure that current storm water standards are implemented where possible. Low Impact (Storm Water) Development Standards (LID) checklist as adopted by the County Board will be used when appropriate for a project.
GBI.28	GBI Design Phase	GBI - Site Connectivity			s	Design site to reconnect fragmented landscapes and establish contiguous networks with other natural systems both within the site and beyond its boundaries.		Coordinate with County Planning & Natural Resources groups as needed.
GBI.29	GBI Design Phase	GBI - Site Orientation			s	Minimize site disruptions by siting building correctly to create favorable traffic patterns.		Balance these patterns with energy efficiency goals.
GBI.30	GBI Design Phase	GBI - Building Orientation			s	Optimize building placement and configuration to take advantage of solar energy and prevailing winds. Preferred main entry orientation is to the south or east for safety during winter. Work closely with fenestration orientation for daylighting.		Coordinate with other related items.
GBI.31	GBI Design Phase	GBI - Landscaping			s	Use varieties of native trees, shrubs and plants to minimize maintenance, reduce yard waste and decrease water consumption. Use disease and insect resistant varieties.		Focus is upon locally produced materials and native plant species for disease and drought resistance. Use nursery stock from growers within a 100 mile radius. Ash trees are prohibited in all designs.
GBI.32	GBI Design Phase	GBI - Site Landscaping			s	Specify plant materials that are native and tolerant to local conditions. Protect and preserve mature trees when possible. Specify MPCA's Best Management Practices for soil erosion control. Specify locally produced yard waste or manure compost for soil amendments. Specify reuse of any onsite materials. Specify that all cleared materials be recycled or chipped and composted for re-use. Consider specifying locally produced yard waste or manure compost for soil amendment, with consideration of food waste compost in non-contact areas. SWCD – Provide multi-functional landscaping where possible to enhance site water retention. A maximum 25% of landscaped areas will be manicured lawns. Seek variance from local Code as needed.	MPCA's Best Management Practices	Focus is upon locally produced materials and native plant species for disease and drought resistance. Use nursery stock from growers within a 100 mile radius.
GBI.33	Not Used							
GBI.34	Not Used							
GBI.35	GBI Design Phase	GBI - Water Conservation			s	Use efficient irrigation systems that are no longer needed once plants are established.		Minimize use of municipal or well water systems. Use rain gauge and programmed controlled irrigation control systems.
GBI.36	GBI Design Phase	GBI - Site Mass Transit			s	If building is located near MTVA or MTA bus stop, future light rail stop or bike trail system, provide a landscaped pedestrian connection between stop shelter and building.		
GBI.37	GBI Design Phase	GBI - Site Pest Mgmt.			s	Use integrated pest management system to reduce cost and the environmental effects of chemical applications.		Spot address pest problems when and if they occur.
GBI.38	GBI Design Phase	GBI - Energy Tracking		E	s	The County has an enterprise wide energy tracking system that allows Operations to find anomalies in our energy use.		Coordinate locations of any sensors needed to extend energy management system with Operations.
GBI.39	GBI Design Phase	GBI - Energy Conservation		E	s	Run a building energy use profile. Right size HVAC equipment and ductwork to take advantage of reduced internal heat loads.		Use this strategy to reduce energy consumption through accurate sizing of boilers, chiller, towers, emergency generators and Information Technology (IT) support mechanical equipment.

CSI	Section	Item	A	E	s	Standard	Reference	Additional Comments
GBI.40	GBI Design Phase	GBI - Energy Daylighting	E	s		Maximize opportunities to daylight the building. Specify skylights, light shelves or light scoops, clerestories, etc. to daylight building naturally and conserve electrical energy. Use only high insulating triple glazed curtain wall systems or R20 Fiberglass Translucent Panels.	Kalwall Corporation - System 7550 Curtainwall. Fiberglass Translucent Nanogel Panels.	For renovations - restore daylighting features. Avoid blocking natural light by changing floor plans or interior spaces.
GBI.41	GBI Design Phase	GBI - Energy Shading	E	s		Specify shading mechanisms, overhangs, etc. to reduce solar gain during peak cooling months to conserve energy.		Cooling season for commercial buildings is April through September for Minnesota. Shades cannot interfere with window cleaning.
GBI.42	GBI Design Phase	GBI - Natural Ventilation	E	s		For small buildings (15,000 square feet and smaller), consider natural ventilation using operable windows and skylights. Use only with Owner written approval.		Interlock window contacts with pressurized cooling systems e.g. Air conditioning will not operate unless all windows are closed and latched. All buildings with operable windows will have a full reporting security system installed.
GBI.43	GBI Design Phase	GBI - Energy Vegetation	E	s		Use plant vegetation materials to protect building envelope in the winter from wind and solar gain in the summer.		Coordinate with Security initiatives requiring plantings clear of certain structures.
GBI.44	GBI Design Phase	GBI - Indoor Air Quality Order of Construction		s		Specify that all wet and odor producing work be completed prior to dry work.		
GBI.45	GBI Design Phase	GBI - Indoor Air Quality Code		s		Specify ventilation systems to meet or exceed current ASHRAE 62.1 Ventilation Standards for Acceptable Indoor Air Quality.	ASHRAE 62.1	Use most recent or sensible version of adopted ASHRAE standards.
GBI.46	GBI Design Phase	GBI - Indoor Air Quality Air Filtration		s		Specify air cleaning and filtration systems that meet or exceed the efficiency ratings of ASHRAE Standard 52.1, <i>Method of Testing General Ventilation Air Cleaning Devices for Removal Efficiency by Particle Size</i> Building Air Filtration will meet or exceed MERV rating of 15.	ASHRAE Standard 52.1	Ventilation system will be sized to compensate for high level filtration pressure-volume drop.
GBI.47	GBI Design Phase	GBI - Indoor Air Quality Spot or Temporary Ventilation	E	s		Specify that temporary ventilation be used during construction activities and that permanent HVACR systems cannot be used until Owner approves in writing. If permanent heating or cooling coils become dirty - they will be replaced with "new". Permanent spot or special ventilation will be provided as noted. Spot ventilation will be controlled locally and used only when equipment is in operation.		Permanently ventilate blueprint and large copier rooms directly to the outside. Interconnect fan and damper operation to equipment operation. Address ventilation issue when new equipment is added to office areas. Do not relocate specially ventilated equipment until ventilation issues are formally addressed for new equipment location.
GBI.48	GBI Design Phase	GBI - Indoor Air Quality Special Equipment		s		In the presences of wood shop dust, cement testing chambers, paint booths and other confined areas, special dedicated collection/mitigation systems may be required. Note OSHA silica standards in OSHA's 29 CFR 1926.1153.	OSHA's 29 CFR 1926.1153	Specify special filtration/collection systems as needed. Example: New sawdust and silica (portland cement) collection systems are being used at the Empire Additions (MFOS Ph.1) project.
GBI.49	GBI Design Phase	GBI - Indoor Air Quality Carpet		s		Specify carpet and flooring materials are off-gassed prior to installation to reduce emissions. Use factory-cured water based carpet adhesive or no/low VOC adhesive products only.		
GBI.50	GBI Design Phase	GBI - Building Materials		s		Specify building materials and products based on their full environmental life-cycle. Use County sustainable materials wherever possible (embedded within these standards with the "s" column designation).		Include all environmental requirements in the bid documents. Require that Manufacturers certify in writing that materials comply with these requirements.

CSI	Section	Item	A	E	S	Standard	Reference	Additional Comments
GBI.51	GBI Design Phase	GBI - Building Materials				Architects and Engineers should always make environmentally responsible choices regarding new building materials and the disposal of discarded products. Safe use of recycled materials need to be maximized within the project requirements. Evaluate building materials and products based on full environmental life cycle. Use recycled content building materials; wood from sustainably-managed forests; materials from renewable resources and avoid materials from scarce or nonrenewable resources; materials from manufacturing plants that are energy and water efficient, reuse waste in production and reduce air emissions; minimal packaging; local manufacturers when possible; paints, adhesives and sealants that are low emitting; durable long-lasting materials.		To reduce transportation energy costs and emissions, 1st choice will be manufacturers or local products within a 200 mile radius of Dakota County. This includes brick, stone, concrete products, interior finishes and furnishings.
GBI.52	GBI Design Phase	GBI - Waste Reduction				Specify construction waste recycling. Use County standard specification as per County's General Conditions (Art. G-18).		Adapt County specification to specific project conditions.
ACCOM.1	Accommodation	Accessible Door Operators				Provide hardwired electric push button type door operators on all main entrances that are open to the general public. These are limited only to exterior entrances. Do not use "pressure sensitive and dependent pull type units."		At this time, push-button door operators are not used in building interiors. So, care must be taken on the selection of doors and closure types so that they remain compliant.
ACCOM.2	Accommodation	Lactation Areas				Provide designated private area for County employee nursing mothers to use lactation equipment to meet or exceed code requirements. County prefers to include a countertop with sink, a wall mirror, area for a table and chair with a swinging tablet, space for a locking refrigerator (or similar) and a 120 volt receptacle. Provide "OCCUPIED - VACANT" lock actuated signage on all new doors.	Mobile Lounge Chair similar to: Haworth ToDo "TQ85-011-R" with accessory tablet arm "TQ90-0001".	Identify in space program for new buildings and major renovations. Lactation rooms to be used primarily by County staff, and can be located in staff only areas, not accessible to the public.
ACCOM.3	Accommodation	Wellness Room				Provide minimum of one room per building. In multi-story buildings, provide one per floor. Space required: One standard office sized room, no sidelight, no outside window.		Furniture to include healthcare recliner, side table and table lamp on dimmer.
ACCOM.4	Accommodation	Lavatory Reinforcement				Provide adequate supports in public restroom vanities and lavatories to accommodate the same weight per lavatory as waterclosets in the event persons climb onto them. Wall-hung sinks at public restrooms discouraged unless reinforcement to same weight bearing capacity as waterclosets is confirmed. Public restroom vanities that are solid surface should have an integral sink for this reason. If the vanity is quartz though, then either a drop-in sink or some additional means of supporting the sink bowl (undermount) must be specified - a "Hercules Universal Sink Harness Kit" by Braxton-Bragg (or similar).		The public has been known to bathe/wash in our public restroom sinks.
010000.01	All	Alternates				Use add alternates unless Owner specifies otherwise.		Alternates are recommended and included as part of value engineering. They can total up to 5% of the construction budget.
010000.02	All	Bid Advertisement and Official Notice				Owner Furnishes and Advertises. Use/Modify Owner furnished - adapt to project. Bid notice must include basic project scope, bonding requirements, bid date and time and County or Consultant contact. Competitive bids will be advertised for three consecutive weeks in the official County designated paper. All projects over \$50,000 are advertised 2 consecutive weeks. - Major Projects minimum 3 consecutive weeks with bids due one week following last advertisement.	County Policy #2751	Owner's Project Manager will send bid notice to publisher. Depending on the project size, bids will be advertised two or three times in consecutive weeks. Bids will be opened one week following the last official notice. Include in the Bid Notice the date when it is anticipated that County Board action will be taken for award. This process is transitioning to web only.
010000.03	All	Bid Form				Use Owner furnished - adapt to project.		Owner will determine how many bid packages there will be. Owner may choose to bid packages separately.
010000.04	All	Bidder Instructions				Use Owner furnished only.		Owner will provide Instructions to Bidders for Project. Specifications section 10000 must reflect this.

CSI	Section	Item	A	E	s	Standard	Reference	Additional Comments
010000.05	All	Building Permit				The Contractor shall pay for the building permit and invoice directly to the Owner at cost without mark-up. This cost shall be excluded from the Contract. Copies of all building permit information shall be attached to the invoice and submitted to the Owner. All other permits and licenses required by all other agencies shall be obtained and paid for by the Contractor. Escrow account payments shall be at the Contractor's expense and shall not be passed on to the Owner as this money is refundable.		The Contractor shall obtain the building permit fees required for the project from the City or jurisdiction in which the project occurs. Additional fees may be required from other agencies as they apply to the project.
010000.06	All	SAC/WAC				The Contractor shall complete forms, pay for SAC/WAC charges, and invoice directly to the Owner at cost without mark-up. This cost shall be excluded from the Contract. Past SAC/WAC site credits will be transferred from any existing buildings on the site and be applied to new construction.		The Contractor shall obtain the SAC/WAC charges required for the project from the City or jurisdiction in which the project occurs. For the required State Dept. of Health plan review, the Architect shall submit the application and the Owner will pay the plan review fee. See also item # 220000.
010000.07	All	Housekeeping				Sites to be kept clean and safe at all times. Specific requirements will be included in Owner General Conditions.		All cleaning during construction is by the General Contractor. All construction areas will be thoroughly cleaned up to the Owner's satisfaction prior to the end of the work shift every Friday. Final Cleaning following construction is by Contractor, just before Owner occupancy. Once Owner has begun furniture installation, housekeeping is performed by the Owner for completed areas. The Project Manager notifies operations staff when Owner permanent cleaning should begin.
010000.08	All	Close-out				Contractor/Architect complete and submit Owner checklist		County furnishes check list of project closeout requirements to A/E & GC
010000.09	All	Closet - Maintenance Storage				Owner provides standard layout for design by Architect and as prescribed in the building program.		Program space to be defined by Owner building by building.
010000.10	All	Closets - Custodial				Prescribed in building program. Owner reviews design by Architect. For new construction and major renovations provide custodial closet and separate storage adjacent to restrooms.		Program minimum of 100 square feet per 25,000 square feet of space. For multistory buildings in excess of 75,000 square feet, a 150 square foot closet will be located on the main floor with trench drain and volume hot water access. CPM Project Manager should confirm the trench drain requirement with the Bldg. Services Mgr. as they may only ask for a "slop sink" instead.
010000.11	All	Closets - Data/Telecom				Owner approves design by Architect - building by building as prescribed in the building program. System must include Main Point of Presence (MPOP) and distribution closets as required.		MPOP size, shape and location shall be approved by Owner's IT Department. Program minimum of 150 square feet per 25,000 square feet of space or floor for distribution closets. Closets shall be centrally located on floor to minimize horizontal cable runs. Dedicated telecom/data rooms shall be provided that are central, secured and 100% environmentally controlled and powered 24-7. Confirm specific size, location and needs with Owner.
010000.12	All	Closets - Equip. Storage				Exterior access for gasoline powered maintenance equipment. Consider indoor bicycle parking area for staff.		Owner approves location and size.
010000.13	All	Code - Building				Current Minnesota State Buildings Codes.		Use current version of the applicable MN Department of Corrections (DOC) code requirements for all secured detention center construction.
010000.14	All	Code - Disability				Current Minnesota Accessibility Code and Department of Justice's Americans with Disabilities Act (ADA) with 2010 ADA Standards for Accessible Design - whichever is more stringent.		Refer to local building official, local code or ordinance - local and state requirements may be greater than the ADA standards. Check if ADA requirements apply to any other areas of the building during all renovation projects. Include addressing ADA requirements in the scope of work for all Architect and Engineering Proposal requests. Reference the 2019 County-wide ADA/Accessibility Assessment and Barrier Removal Plan Report.
010000.15	All	Code - Electrical			E s	Current National Electrical Code (NEC) as adopted by the Minnesota Board of Electricity as required by Minnesota Statutes 326B.32 Subd 2 (3) pursuant to Chapter 14.		Energy efficiency in equipment i.e. transformers or motors and conductor ampacities will generally exceed code requirements. ARC flash study and plan will be completed by Design Team.

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010000.16	All	Code - Plumbing				Current Minnesota Plumbing Code.		All new construction requires separate plan review submittal to and approval by the MN State Public Health Department. Submittal is made by consultant and application fee paid directly by County to State unless otherwise noted in the RFP for consultants.
010000.17	All	Code - Mechanical				Current Minnesota Mechanical and Fuel Gas Code.		Consider also OSHA fall protection standard requirements within mechanical spaces for platforms and needed staff access to equipment (motors, filters, etc.) during maintenance.
010000.18	All	Code - Energy	E	s		Current Minnesota Energy Code.		Exceed code in most applications with County standards. Daylighting and LED fixtures to be incorporated in design.
010000.19	All	Code - Fire			s	Current Minnesota Fire Code.	Refer to insurance carrier's website	Fire sprinkling density is determined by local code and County Insurance Company requirements. 2019 County insurance carrier is Affiliated Factory Mutual. Independent Owner insurance company plan review is required for construction documents and Contractor submittal drawings.
010000.20	All	Code - Life Safety				NFPA 101 & current Minnesota State Buildings Codes.		Use most restrictive of the two.
010000.21	All	Code - Safety				OSHA - also NIOSH, ANSI and MSA as applicable		Note that OSHA requirements for fall protection may require a dedicated restraint or railing system at the roof edge or roof penetrations.
010000.22	All	Code - EPA Requirements				EPA's Spill Prevention, Control and Countermeasures (SPCC) requirements at Title 40 of the Code of Federal Regulations, Part 112. SPCC plans ensure that facilities put in place containment and other countermeasures that would prevent oil spills that could reach navigable waters. Oil is defined as oil of any kind or in any form including, but not limited to, petroleum, fuel oil, sludge, oil refuse, and oil mixed with waste.		Include provisions in all project bid documents to comply with this.
010000.23	All	Third Party Commissioning by Owner	A	E	s	Allow six (6) weeks minimum in schedule prior to Occupancy. The County PM will solicit for Commissioning (where applicable), but coordination/consultation of scope and scheduling will be done with Design Team and potentially the Contractor. Commissioning done at the County is a secondary and 3rd party check of "FPT/TAB" work. FPT/TAB work shall still be done by the Contractor and in advance of the 3rd party check.		HVAC Functional Performance Testing (FPT) and Testing and Balancing (TAB) is first performed through the GC and then verified with a 3rd party commissioning agent (Owner's FPT/TAB agent). Mechanical Engineer provides bid document that includes FPT/TAB from final design documents. Commissioning protocol to be developed by Owner with input from design team, including Sequence of Operations.
010000.24	All	Construction Limits				Architect and Owner - concurrence		Adjust if needed for Contractor construction or storage requirements
010000.25	All	Construction Methods			s	Construction means and methods are Contractor responsibilities unless specified otherwise in bid documents.		Exception is Owner furnished equipment. Any special Owner requirements concerning contractor construction methods are defined in the bid document prior to receipt of competitive bids.
010000.26	All	Construction Contract Type				General Contractor (Design-Bid-Build) with no multiple contract packages direct with Owner, unless prior approval is received from Owner.		Design/Build is not normally practiced at the County.
010000.27	All	MEP Coordination				Contractor reviews and fully coordinates Mechanical, Electrical & Plumbing submittals for completeness of systems.		Contractor furnishes, installs, provides all drives, power and control wiring, programming, startup and initial operation of all mechanical and electrical equipment for a complete system.
010000.28	All	Deliveries				Owner will not receive any materials for Contractor		State within bid document General Conditions
010000.29	All	Drawings - Design Working				Architect/Engineer submits AutoCAD or Revit in latest version to Owner. All Drawings will be 30" x 42" in size, unless authorized by CPM otherwise. All 1/2 sized drawings shall be printed to be readable.		Submitted to Owner Project Manager prior to start of construction, revised during construction to incorporate all addenda and approved changes and final record set submitted to Owner prior to final payment at end of project. No font shall be smaller than 3/32" on full-sized drawings.

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010000.30	All	As-builts & Record Documents			s	Contractor submits "as-built" documents to Owner through Architect. Architect then thoroughly reviews for completeness and revises for correctness into Record Documents. Final Record Documents and updated AutoCAD file then provided to the Owner (Revit in addition whenever possible).		Flashdrive + (2) each full size and 1/2 size prints (AutoCAD for all Construction Document drawing sheets).
010000.31	All	Equipment Start-up & Staff Training				Systems shall be completely functional before training is provided. Seven calendar day advance notice to Owner is required to schedule training. Equipment start up and training are base project requirements, distinct from, and in addition to, Commissioning. See section #10000.23.		Video recording of training may be required on training of advanced systems, or when all key staff cannot attend training. Specify recording or training requirements in bid documents.
010000.32	All	Floor Finish			s	Architect specifies product when product is not provided by Owner.		Contractor strips, seals and applies finishes to hard floor including terrazzo, vinyl tile and linoleum. Product and application to be reviewed and approved by Owner at time of application.
010000.33	All	General Conditions				Use only Owner provided General Conditions for Construction in the Bid Document.		Owner will provide General Conditions for Project. Specifications section 10000 must reflect this.
010000.34	All	Hazard Notification				Contractor is responsible for all hazard notifications, including but not limited to: confined space work; lock/tag-out; "Hot Works Permit" (yellow tag); life safety system suspension (red tag).	OSHA Standard 1926, OSHA Standard 1910, US Dept of Labor Directive CPL 2-0.124	Includes multi-employer work place regulations. OSHA Standard 1926 Construction; OSHA Standard 1910 General Industry; US Dept. of Labor Directive CPL 2-0.124 Multi-Employer Citation Policy
010000.35	All	Hazardous Materials				Certification and licensing to handle, place or remove. Specify that MSDS sheets will be provided to Owner for all Hazardous Materials incorporated into each project.		No asbestos, PCB or other hazardous materials will be used in any part of the building without prior notice to the Owner. Hazardous materials will not be used in the interior of the building.
010000.36	All	Design Observations				Design Consultant visits the site weekly and submits Observation Reports (including photographs) to Owner Representative / Project Manager within 24 hours of the visit.		Design observations and corresponding reports shall be provided by all disciplines of the Design Consultant Team at relevant times as the project progresses. These are in addition to any Contractor created reports.
010000.37	All	Interpret Design				Design Professional - Provide notice of any Design Interpretation directly to Owner Representative prior to any transmittal or issuance to Contractor.		Notices shall be done in writing, preferably through the RFI process.
010000.38	All	Interruption				72 hour advance notice of adverse impact to existing operations.		
010000.39	All	Liquidated Damages				Decision to use liquidated damages will be made by Owner. When used, amount of damages will be specified by Owner.		Case by Case - Generally not used unless actual incurred costs can be determined. Use of punitive liquidated damages can create indefensible liability for Owner and prevent recovery of actual damages.
010000.40	All	Meeting Pre - bid				At least 7 calendar days prior to receipt of bids		Owner schedules with Architect
010000.41	All	Meeting Preconstruction				Owner schedules within 20 days of notice to proceed		Contractor provides all communication and critical delivery info including total project schedule, submittal logs, safety, security, etc.
010000.42	All	Meeting Progress				Weekly meetings on-site.		Subcontractors may be present. However, this meeting is not the Foreman's weekly planning meeting- it's an "Owner/Architect/Contractor (OAC)" meeting.
010000.43	All	MSDS sheets				Prior to introduction of any chemical or compound onto County property, Contractor furnishes (3) copies directly to the Owner cc: Architect for all materials to be used in construction or on County property. Contractor must keep 3 ring binder with all MSDS sheets readily available at the site project office.		Copy of each GHS SDS (formerly MSDS) sheet to Project Record - all materials used during construction. Standards: 1926.59 Hazard Communication Construction and 1919.1200 Hazard Communication General Industry
010000.44	All	O & M Manuals				Contractor will furnish all operation and maintenance information necessary for the Owner to install, operate, maintain, repair or replace all components and equipment in the facility.		Design Consultant shall review manuals for content and completeness, and shall approve two (2) complete copies formatted on 8.5 x 11 sheets, fully indexed with section tabs. Minimum of 2 weeks prior to training and following Architects review.
010000.45	All	O & M Training				Contractor provides to Owner. Training is scheduled 2 weeks in advance. Includes Warranties, training, spare parts in General Contractor submittal schedule.		Include specific training requirements in document. Identify additional training needs for sophisticated systems e.g. HVAC controls. Requirements are included in Owner General Conditions

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010000.46	All	Occupancy Permit				Obtain final Certificate of Occupancy (CO) and at the Owner's discretion, an interim Temporary Conditional Occupancy (TCO) to meet Owners needs.		Contractor obtains/pays for CO or TCO(s) prior to issuance of certificate of substantial completion.
010000.47	All	Permanent Utilities - Gas & Electric				Electric & Gas Utility Companies working in coordination with the Owner, installs and connects. For new construction - Contractor initiates and opens all accounts and pays connection fees. General Contractor will provide complete as-built drawings of all utilities to the Architect. Architect reviews and corrects and submits to Owner. As-Built utility drawings will be submitted in current version of AutoCAD with one hard copy to the Owner. Owner will provide final survey of improvements for accurate locations.		Contractor notifies County 6 weeks in advance of need for permanent utilities including natural gas, electricity, water, sewer, & storm sewer. Note: Utility may require that the new service be in the Owner's name. If this is required, the Contractor will still pay for the new service connection and all temporary power use for project construction.
010000.48	All	Permanent Utilities - Sewer, Water & Storm Water				Sewer, Water & Storm Water Contractors working in coordination with the Owner, installs and connects. For new construction - Contractor initiates and opens all accounts and pays connection fees. General Contractor will provide complete as-built drawings of all utilities to the Architect. Architect reviews and corrects and submits to Owner. As-Built utility drawings will be submitted in current version of AutoCAD with one hard copy to the Owner. Owner will provide final survey of improvements for accurate locations.		Contractor notifies County 6 weeks in advance of need for permanent utilities including natural gas, electricity, water, sewer, & storm sewer. Note: Utility may require that the new service be in the Owner's name. If this is required, the Contractor will still pay for the new service connection and all temporary power use for project construction.
010000.49	All	Permanent Utilities - Telecommunications & County Fiber				Design Consultant to coordinate with County IT Department for specific needs. Fiber optic, or other final connectivity, will be determined by County IT. Phones may be VOIP.		Occasionally a cable or satellite TV Vendor will be involved in the project and coordinated by County IT.
010000.50	All	Photos - Progress				Architect provides photos to document progress and include in weekly progress report.		Owner may create separate photo documents.
010000.51	All	Photos - Final				Architect provides and pays for photo series of final exterior and interior shots to be shared with the Owner. Number of shots to be coordinated with the Owner at the time of the photo shoot.		Owner will provide credit when professional photography is used.
010000.52	All	Prevailing Wages				Prevailing wages apply to all projects greater than \$25,000. Contractors will submit directly to Owner.	County Board Resolution 95-55	Architect incorporates Owner's language. County Board Resolution 95-55 regulations - include reference to prevailing wages in three locations in all bid documents: 1) Advertisement for Bids, 2) Invitation for Bids, and 3) On the Bid Form.
010000.53	All	Project Sign				County prefers not to publicly advertise projects through signage.		Signage use may be allowed on a project by project basis, verify with Owner.
010000.54	All	Punch List Preliminary				By Contractor completed prior to Substantial Completion.		Contractor notifies Architect/Owner that they are substantially complete.
010000.55	All	Punch List Final				By Architect/Engineer just prior to occupancy and following receipt of completed preliminary Contractor's punch.		Completion of this punch list is required prior to Substantial Completion.
010000.56	All	Reports - Daily				On large projects, Contractor completes daily report - work force and activity and submits to both Architect & Owner.		Include weather, equipment, manpower, subs, inspections, exceptions.
010000.57	All	Reports - Test				All Test Lab Reports are to be copied to: Owner, Architect, Contractor, Sub/supplier and Building Official.		Includes soil tests, concrete tests, and all field or laboratory tests specified in the bid documents.
010000.58	All	Requests for Information (RFI's)				Contractor submits to Architect and copies Owner at time of initial submittal and each resubmittal or communication. Electronic document submittal system (i.e.; Submittal Exchange) will be used for major building construction projects.		Architect is required to reply within a timely fashion. Architect is to work with the Owner's Project Manager on items dealing with cost before replying to Contractor.
010000.59	All	Safety				Contractor is responsible for project site safety.		
010000.60	All	Sanitary Facilities				Contractor provides unless project is in existing building and approved for use by the Owner.		When Owner approves the use of existing facilities, the Contractor must keep them clean.
010000.61	All	Schedule -Initial				Owner provides initial schedule for inclusion in Construction Bid Documents.		This may range from a list of critical dates to a Critical Path Method schedule.

CSI	Section	Item	A	E	s	Standard	Reference	Additional Comments
010000.62	All	Schedule -Construction				Contractor shall provide a project work schedule to the Owner at commencement of the project. Project work schedule shall be updated monthly and submitted with progress pay applications.		Show all major or critical construction phases including long material or equipment delivery lead times prior to award of project. Notify the Owner as soon as possible if the Substantial Completion date changes.
010000.63	All	Schedule of Values				Owner provides minimum requirements list to Contractor and Architect prior to preconstruction meeting.		Use AIA G703 and follow specification section format.
010000.64	All	Shop Drawings		E		Follow shop drawing and submittal procedures as noted within current Dakota County General Conditions. Modifications only allowed with Owner approval.		
010000.65	All	Site - Assessment			s	Environmental Assessments - completed by Owner and provided to Architect.		For renovation projects, this may include asbestos and mold investigations by Owner.
010000.66	All	Site Survey				Provided by Owner.		County surveyors do not provide ALTA (American Land Title Association).
010000.67	All	Soil Borings			s	Structural PE determines locations. Design Professional assists - Owner contracts direct and pays for all soil boring and geotechnical evaluations.		
010000.68	All	Spare Parts / Attic Stock				Contractor inventories, Generates transmittal lists and transmits to Owner prior to Occupancy		Owner will specify types and quantities. Note that the County has limited storage space. This is to be considered on attic stock products that are bulky (pallets of carpeting/flooring, etc.).
010000.69	All	Storage Temporary				Contractor and Owner agree at Pre-construction meeting		
010000.70	All	Substitutions				Only Owner shall approve any substitutions to specified standards. See Owner General Conditions.		Architect evaluates and recommends substitutions to Owner. In general, no substitutions are approved after award unless it can be proven that the specified product cannot be obtained
010000.71	All	Temporary Heat		E		Contractor provides enclosure and equipment. Owner pays for temporary heating fuels (natural gas and propane) for building enclosure only.		Natural gas will be used for temporary heat if available at project site. This does not include temporary heat for cold weather concrete or masonry installation.
010000.72	All	Temporary Construction Utilities				Contractor furnishes, installs, and pays for installation of any temporary utilities not ultimately used for permanent utilities.		
010000.73	All	Testing - Independent				Owner shall contract directly with an Independent Testing Agency. Design Consultant shall include the required testing and inspection schedule in the bid documents.		Contractor notifies test lab re: pending work- contractor pays all retest costs that are billed to the Owner.
010000.74	All	Testing - Substitution Approvals				Contractor is responsible for any testing that Owner or Owner's representative requires prior to approval of substitutions. This is only when the specified item is no longer available.		Contractor will also pay for testing required to prove that a system or material is as specified. If it is in fact proven to be NOT to be as specified, then Contractor shall pay for the testing and correction.
010000.75	All	Unit Pricing				Unit pricing provided by Contractor shall include all labor, material, equipment, overhead, profit, sales or use tax, insurance & bond.		Limit unit price requests and base all on some rough quantity. (Establish a NTE value)
010000.76	All	Warranty				Contractor notifies Architect, or in the absence of an Architect, the Owner in writing of date requested for the warranty to begin. Warranty will be a minimum of one year. Landscaping and special construction will be two years warranty coverage. Mechanical equipment warranty minimum 1 year P&L with 5 year compressor warranty.		Also see Roof Warranty standards.
010000.77	All	Warranty Inspection				End of year inspection/walk through.		Performed by Design Consultant, Contractor, Facilities Management and CPM at or before 11th month of occupancy.
010000.78	All	Waste Disposal			s	Dumpsters at adjacent Owner structures will not be used by Contractors	See Dakota County General Conditions	Contractor provides all dumpsters for waste and recycling. Owner will provide names of companies for inclusion in the bid documents. Contractor provides monthly reporting with pay request with all totals by weight and recycled characteristics.
010000.79	All	Waste Reduction	A		s	Contractor will follow Owner recycling/waste guidelines		Owner furnishes to Architect for inclusion in project documents
024000	Existing Conditions	Demolition	A		s	Supplement Architects standard demolition specification 02060 with Owner's Model Specification - Salvage and Reuse and Recycling. See Appendix F of the Sustainability Guide		Prior to initiating any demolition project - Complete the Building Demolition Plan Checklist - Appendix C of the Sustainability Guide

CSI	Section	Item	A	E	s	Standard	Reference	Additional Comments
32000.01	Exterior Improvements	Snow storage areas			s	During site design, identify plowing scheme, allow for heavy equipment, designate areas to stack snow, surmountable curbs and treat snowmelt run off.		If snow stacked on landscaped areas - allow access etc. in landscape plan. Load snow for slow melt into ground for recharge of aquifers. Sodium and potassium chlorides are soluble that cannot be addressed.
32000.02	Metals	Reinforcing steel			s	Architect / Structural Engineer to specify.	North Star Steel	Maximize amount of reclaimed / recycled steel content. Goal is 100% recycled content for all reinforcing steel.
033000 033100	Concrete	Structural Cast in place			s	Use 4000 psi concrete as minimum for all areas. Increase fly ash content from 20 to 25% in Portland cement - providing strength and durability are not compromised.	Fly Ash - NSP Power Plant	Exterior concrete will be broom finished concrete. Above grade concrete will be 4,000 psi or greater. All roofs at or above 3 stories will be cast in place reinforced concrete deck with a minimum design load of 60 psf "not" including roof system and insulation. Discuss the use of water reducing agents, plasticizers and other add mixtures with owner prior to specifying or approving use. Water to cement ratio must be controlled for all project concrete without adding water or admixtures at the job site. Test cylinders will be specified to be taken only after any additions and from the final 1/3 of the truck load.
033053	Concrete	Sidewalks			s	Use minimum 3500 psi concrete with air entrainment and granite chip aggregate to reduce effects of pit run aggregate degradation and pop out. Apply penetrating concrete sealer to all side walks. Standard reinforcing is to be 6" WWF.	Same as cast in place.	Exposed aggregate finish is prohibited from exterior walks, curb cuts, ramps or traffic crossings. Fiberglass reinforcing is acceptable as Owner approved option to WWF.
033500	Concrete	Finishing				Broom finish for sidewalks. Consider light broom finish for interior concrete in wet locations including a sealer with a slip resistant admixture. Other interior concrete shall be steel troweled smooth.		An interior broom finish in garages to reduce slips on a wet surface should be considered.
033519	Concrete	Colored				Color will be mixed throughout concrete. Surface color topping is not permitted.		
033529	Concrete	Tooled				Smooth tool 4" around all sidewalk sections.		
033533	Concrete	Stamped				Can only be used with Owner written approval.		No exterior stamped concrete.
033800	Concrete	Post-tensioning			s	Do not use cast-in-place post tensioned floor slabs		Precast post tensioned or prestressed concrete plank and tees are permitted with Owner approval.
033923	Concrete	Concrete Curing Compounds			s	Use Low VOC form release agent and curing compounds.	Seal Tight Duogard II, BioForm, AquaForm	All membrane curing compound will be pigmented unless a colored concrete highly finished surface is approved by the Owner.
034100	Concrete	Precast concrete - plank/stone, columns and beams.			s	ACI 318 - fully self supporting - per manufacturer's installation recommendations. Bottom (interior side) of all precast plank will be "steel trowel" smooth finished. Precast concrete post, wall, roof, beam construction will be used for all high security installations and high wind resistance such as dispatch, jail, courts, etc.		Fabricate to $\geq 1/8$ " tolerance - square ends and matching surfaces
034500	Concrete	Precast - wall panels			s	Most often used for shops, garages, cold storage, free standing garages etc.	FabCon, Wells	Refer to insulation requirements within 072000 item below.
038000	Concrete	Cutting & Boring				All openings in existing concrete will be neatly cut. Roto drills / jack hammers etc. will not be used to create openings in permanent structures. Only saw cut straight lines and cores are permitted.		See OSHA respirable silica crystalline standard for construction dust control requirements.
040000.01	Masonry	Inspection			s	Adhere to Owner's Quality Control and Assurance Policy		Independent consultant may be used under direct contract with Owner
040000.02	Masonry	High Wall / Low Roof			s	Owner has and provides approved details for masonry terminations including all high wall/roof intersections		Use only approved flashing detail to accommodate future roof replacement without loss or damage to existing flashings.
040500	Metals	Embedded - Masonry			s	Only stainless steel masonry ties are permitted. The County prefers all embedded metals, supports and anchors \ for stone, masonry or precast stone façade components to be stainless steel. The costs of this should be discussed during design.		Other materials than stainless steel may be consider on a case by case basis by Owner. Large load bearing members may be non-stainless if detailed correctly and approved by the Owner.
040513	Masonry	Mortar and grout				Architect to specify - compatible with brick.		Subject to approval by Owner independent consultant.

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040519	Masonry	Unit masonry anchors			s	Double eye and pintel installed maximum of 16" on center. horizontal and vertical for 8" nominal materials; 16" for large brick, otherwise every other head joint. All masonry anchors will be stainless steel.	Dur-o-wall	
040523.01	Masonry	Flashing Thru-wall			s	EPDM Flashing and end dams - EPDM - continue to visible surface and 1/4" past finished façade surface all locations.	Firestone, Carlisle SynTec	No pvc - use Firestone Flashguard or equal. Provide flashing dams at all interruptions in flashing with 4" minimum turn up.
040523.02	Masonry	Limestone	A		s	Limestone will be Minnesota native Kasota stone only . Quality of finish will be veined cut with sawn finish. Color range will be cream - no dark brown or gold. No stone capstones are allowed (only prefinished metal).		Limestone is to be used for vertical wall sections only. Limestone should not come into contact with grade or exterior concrete pours- use granite if natural material is required.
040523.03	Masonry	Vertical Expansion Joints			s	Provide continuous vertical 1/2" minimum vertical expansion joints in brick and backer block where designated by Architect on drawings. Provide within two feet of both sides of outside corners, at inside corners, between dissimilar materials and spaced at no more than 20 horizontal feet on center. Provide all other horizontal expansion joints in masonry structures where appropriate.		
040523.04	Masonry	Embedded Flashing			s	Use Owner provided details for all embedded flashing.		
040523.05	Masonry	Weeps & vents			s	Rope - cotton only maximum 24" on center horizontal joints. All weeps will be a minimum of 6" above grade. Mesh cavity protection will be used to ensure weeps are functional after wall construction is complete. The goal is to prevent the wall cavity from being filled with mortar.		Provide vents 24" on center. in exterior vertical masonry joints 4 brick courses or 12" maximum above all flashing at base of cavity veneer walls. Weep vent spacing at top of wall will be a maximum of 4' on center and a minimum of 3 full brick courses below top flashing. Masonry vents will be sized to fit tight in the joint and be firmly anchored in the mortar joint in accordance with the manufacturer requirements.
042100	Masonry	Unit Masonry			s	Architect to specify - maximum 2 brick colors, subject to approval by Owner.	Ochs Brick Co., Springfield MN	Provide Owner with one pallet of each brick color at substantial completion. Bond and flexural strength test 1 per 5,000 sf unless approved by Owner or Owner's consultant. Brick with porosity selected for this climate is most important.
042300	Masonry	Glass Unit				No glass masonry will be used for any exterior surface.		
042200	Masonry	Concrete Unit				May be used for interior load bearing walls and sound insulation.		Owner prefers that concrete unit masonry be limited to interior applications only and that precast concrete panels, columns and beams be used for all exterior building perimeters.
044100	Stone	Dry Placed				May only be used for exterior and interior landscaping as approved by the Owner.		Use of an adhesive is permitted.
044200	Stone	Exterior Cladding				With Owner permission only.		Owner has permitted or requires the use of limestone and granite for specific applications.
044300	Stone	Masonry				Mankato Kasota Limestone is used to a limited extent only at the Hastings Government Center site.		
050000	Metals	Recycled Content			s	100% - all specification sections		Select only those manufacturers using 100% recycled metals.
051200	Metals	Structural Steel			s	Architect/Structural Engineer to specify.		
052100	Metals	Steel Roof Joists			s	Joists are sized in 2 Steps: 1) All steel roof joist designs will be 50% greater than code. 2) Then provide the next standard size larger than required by code. No custom joist sizes (use standard AISC sizes) permitted. Standard prime finish is sufficient.		On 3 level and greater buildings - provide full structural concrete floor as roof.

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053100	Metals	Decking - metal			s	Architect to specify that all steel decking will be primed. That units will be secured to supporting members with fusion welds. Weld metal will penetrate all layers of deck material and will have good fusion to supporting members. Structural supporting members will not be damaged by welding procedures or burn-throughs. All steel roof decking will be a minimum of 16 gauge. All metal roof decking will be reviewed by and conform to Factory Mutual requirements. Use 10' wide sheets and increase thickness to resolve FM90 uplift issues. This will reduce the number of deck laps and welds.	See also Specifications Section 75100 and 75323 www.sdi.org	No holes through deck are permitted from welding process. Provide metal closure strips for complete support of roof insulation where rib openings in top surface of deck occur adjacent to edges and openings. Weld all closures into position. Wire brush, clean and paint all scarred areas, welds and rust spots on top and bottom surfaces of deck and supporting steel members. All roof deck material will be 16 gauge and prime paint finished. Use local code fireproofing and Factory Mutual requirements. If not specified, all roof deck systems will have a minimum fire resistance rating of 2 hours. Ribs will be 1.5 inches deep. Structural concrete roof deck is required at building height at or greater than 30 feet. Use most recent ANSI approved standards for composite steel floor deck and steel roof deck. USE Steel Deck Institute Best Practices Manual - Design Manuals for Composite Decks.
054000	Metals	Cold formed framing			s	Architect and Structural Engineer to specify.		
055200.01	Metals	Handrailing - Interior Stairways			s	Architect to specify. Custom handrailing will be specified only in public areas. Comply with current OSHA and ADA railing requirements. Maximum opening spacing between horizontal or vertical members is 4" or as specified by OSHA.		All handrail members are to be smooth and round aluminum or steel only. NOTE: Handrailing can be used as barrier to 30'. Any area above 30' must have a full barrier to prevent accidental falling or jumping. Handrailing above open areas will be at least 48" and designed to be "non-climbable".
055200.02	Metals	Handrailing - Exterior Only			s	Architect to specify. "All exterior hand railings supported by concrete will be designed so that the vertical supports can be side bolted to the exposed concrete structure. No handrail sleeves or vertical penetration of the concrete structure is permitted for any exterior application of handrailing. All exposed railings and attachments will be unpainted 316 stainless steel with 1/2" by half round anti-skateboarding ribs attached at 4 foot intervals on the top horizontal surface."		All handrail members are to be smooth, round and 316 or marine grade stainless steel only. NOTE: Handrailing can be used as barrier to an exposed height of 30'. Any area above 30' must have a full barrier to prevent accidental falling or jumping. Handrailing above open areas will be at least 48" and designed to be "non-climbable".
061000	Wood/Plastic	Rough carpentry			s	Architects standard for Design - Use only FSC Lumber (FSC accredited, independent, "third-party" certification bodies or "certifiers" certify forests. They assess forest management using the FSC principles, criteria, and standards. The FSC runs the only credible forest certification program as an independent, international nonprofit organization with more than 500 members from environmental groups, progressive companies, forestry professionals, social scientists, and representatives from labor, church and indigenous people.)		The Owner gives purchasing preference to wood and paper products from Forests that are independently certified as well managed per the Forest Stewardship Council (FSC) - FSC Certified lumber will be used if available. FSC lumber bears the FSC logo. For chain of custody certificates visit www.fscus.org/certified_companies. Sustainable Forestry Initiative (SFI) is a lumber industry label and not a certification. SFI cannot be substituted for FSC. Research all wood sources to ensure that wood products used in County buildings are not from old growth or endangered forests.
064023.01	Wood/Plastic	Architectural woodwork			s	Use FSC certified lumber only. Use oak, maple, birch or cherry - stain to match - no exotic or special cuts. Design and manufacture sections in modules so they can be moved and re-used. Utilize wheat board as approved by Owner.		All wood used in projects must be certified and guaranteed that wood is harvested by selectively cutting rather than clear cutting to protect rivers, streams and wildlife habitats. Adhere to FSC requirements. Other species subject to Owner approval. There will be no soffits above any millwork unless approved in writing by the Owner.
064023.02	Wood/Plastic	Architectural woodwork hinges pulls			s	Cabinetry hinges will be heavy duty concealed self closing for all cabinetry doors. Extra heavy standard door hinges will be used for all heavy or oversized doors. Pulls will be stainless steel standard wire pulls.	Blum CLIP	
064023.03	Wood/Plastic	Architectural woodwork drawer slides			s	Cabinetry drawer slides will be medium (90-100#) or heavy duty (150-500#) depending upon application and drawer width/size and loading. Custom file drawers will have only HD 150# or heavier slides. Drawers will be full extension with lever disconnects for drawer removal.	BHMA A156.9 Grade 1HD-200 Knape & Vogt KV8800 Series HD 200 lb.	
070000.01	Therm-Moist Protection	Sealants - interior				Interior Silicone Rubber - acid type for non-porous	Dow-Corning	ASTM C920, Type S, Class 25, Grade NS

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070000.02	Therm-Moist Protection	Sealants - exterior				Polyurethane polymer	Sika Corporation US 2c NS EZ Mix	ASTM C920-87. Fed Spec: TT.S 00230C. Use appropriate grade for floors/walks. Since sustained adhesion, durability and weatherability continue to be issues, verify the correct exterior sealant with Owner prior to specifying or approving for installation.
070600.01	Therm-Moist Protection	Roof Design Review				Roof plans, specs and submittals will be reviewed by Independent Owner Consultant		When necessary, Owner will retain under separate contract an independent roofing consultant.
070600.02	Therm-Moist Protection	Roof Inspection				Roof inspection by independent consultant		Under direct contract with Owner
070600.03	Therm-Moist Protection	Roof Fall Protection				OSHA 1910.21 - 1910.30 and ANSI Standards Z359.1 - Z359.3.		OSHA and ANSI requirements apply. 1) Skylights / covers must resist at least 200 lb. force. Skylights must support 2X maximum anticipated load of worker. 2) Fixed ladders are required from one roof surface elevation to another. Ladders require a personal fall arrest system or ladder safety system if fall distance is greater than 24 feet. 3) If roof does not have parapet or handrail at 42 inches - roof tie-off systems or netting are required. Tie off points must be installed for arrest or restraint systems. Installation must be certified with 5,000 lb. static strength. (OSHA 1910.55 Appendix C) 4) Roof access - direct walk-out door preferred. If hinged door hatch, standard handrail must be around opening (OSHA 1910.23) Hinged roof access doors must be a minimum of 15 feet from the edge of the building.
071300	Therm-Moist Protection	Sheet Waterproofing				Fully adhered 60 mil Butyl Rubber (polyisobutylene) or EPDM sheets where UV is present will be used below grade for structural slabs, slabs on grade, foundation walls and footings. Protection board is required for all waterproofing prior to backfill. For exterior walls, minimum 25 psi extruded polystyrene insulation board will be used. (See also section on perimeter insulation requirements Spec 72113)		Flashing for both Butyl Rubber and EDPM will be non-vulcanized EPDM sheets that will conform to their backing and fully cure to attain the elastic properties of fully cured materials. NO Hypalon (chlorosulfanated polyethylene) or PVC (polyvinylchloride) waterproofing will be used.
071500	Therm-Moist Protection	Sheetmetal Waterproofing				Vertical parapet walls - Built Up -BUR Roofs		Fully adhered ice & water shield with aluminum counter flashing will be used. Fastener system will be stainless steel and 100% watertight.
071923	Therm-Moist Protection	Masonry Water Repellent			s	All exterior face brick, concrete masonry and precast stone or concrete will be treated by Owner.	Protectosil Chem-Trete BSM 400 for Brick Masonry	Unless instructed otherwise by Owner, application of water repellants will be done independently of the Construction Contract and at a date within 5 years of completion, but not prior to two years from final payment. Just prior to the end of the two year period, a complete inspection will be performed to ensure integrity of the masonry and precast systems prior to any application. Apply only Owner approved water repellent. Use appropriate product for each system.
072000	Thermal Protection	Wall Insulation Systems				All exterior walls in the County, whether precast or other construction are to include the insulation requirements as noted in "Additional Comments" at right.		Meet current code requirements and the following requirements (whichever is most stringent). For precast exterior wall insulation value of R20 - polyisocyanurate 2.5" laminated. R20 Wall value is not averaged and applies to prefabricated panels only. R20 is minimum requirement for all other wall systems. When calculating R values - use method that combines Isothermal (Series-Parallel Path Method) Analysis and Thermal Dynamic Building Envelop Analysis. Both methods are provided in ASHRAE Handbook of Fundamentals and from current ASHRAE/IESNA Energy Standard. Use Mass Analysis to determine "true" thermal performance of precast panels including the C-value or conductance of the material. All new construction design will consider adding additional wall insulation to increase the actual (versus averaged) exterior wall R value beyond R20. All designs will pay particular attention to location and amount of all fenestration. For masonry cavity wall construction, the insulation should be extruded polystyrene insulation (XPS).
072113.01	Therm-Moist Protection	Insulation Wall			s	Closed cell extruded polystyrene (XPS) minimum R value R5 per inch - 4" minimum thickness with all joints caulked and sealed. Polyisocyanurate may be used with Owner approval.	Cavitymate, Amfoam SB, Certifoam 25, Dow	Emphasis on recycled content and no use of CFC's in production.

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072113.02	Therm-Moist Protection	Perimeter Foundation Wall Insulation				To achieve R20, provide a minimum 4 inch thick closed cell extruded polystyrene (XPS) to a minimum of 4 feet depth below exterior grade or deeper if required by code or application. Oversize lower foundation wall and provide 3" wide step in foundation wall to fully support and stabilize insulation during backfilling. Board will be minimum 25 psi and R-value of 5 per inch.		Required for all perimeter walls and between slab on grade and exterior walls at or near grade. Insulation thickness may be reduced to 2" between slab on grade and exterior walls. Formed concrete or unit masonry walls must be true and smooth enough to adhere the insulation board. In addition to vertical wall insulation, insulation board will be installed horizontally below slab on grade a full four feet from the exterior wall.
072216	Therm-Moist Protection	Roof Insulation			s	Fully anchored (including coverboard) to roof structure to prevent uplift. Membrane only is adhered. Approved materials will have an "aged" R value of 5 per inch. XPS with greater compressive strengths will be used for high and heavy traffic areas. Design roof insulation value will be " non-averaged " R-38 - Consultant to coordinate w/ wall values. No long runs to roof drains are permitted. All areas must completely evaporate within 24 hours after rainfall. All corners and perimeter low spots will have crickets formed with tapered insulation installed to assure positive drainage. Use of polyisocyanurate (polyiso) or extruded polystyrene (XPS) is acceptable. Tapered insulation systems will not be used for new construction. See additional comments.	Styrofoam, Diversified, Dow, GAS EnergyGuard Ultra ISO with Ultrashield Facer. www.gaf.com	Tested stabilized R values are 4.8 at 1.5 pcf for XPS and 5.8 at 2.0 pcf for polyiso. XPS uses HCFC-142b and Polyiso uses HCFC-141b as its blowing agent during manufacturing. As of 2008 there are no alternatives in the process without increasing flame spread and lower insulation values for both types. Both systems require cover boards for fully adhered/mechanically fastened requirements. XPS has a stable and long term R-Value. The only reason to use Polyiso in lieu of XPS is to reduce cost. Quality will be reduced proportionately. Polyiso does not provide the long term R value that XPS does. Polyiso has a water absorption rate 5 times greater than XPS. Maximum compressive strength of polyiso is 18 psi with facers when new - requiring additional protection board cover. If permitted by Owner, polyisocyanurate (polyiso) insulation may be considered as an alternate providing that 100% fiberglass facers are used - no cellulose facers are permitted. Prior to specifying or installing any polyiso - verify that the material fully meets ASTM E 180 and UL 790 standards. For extremely low traffic areas Polyisocyanurate can be used with a minimum 1" perlite (100% recycled content) fiberboard cover. All other areas require 1.5" of protection board. A thermal barrier board is required to meet FM Class 1 or UL Class A roof installations.
072600.01	Therm-Moist Protection	Air and Vapor Barriers - Above Grade				USE AIR BARRIERS -- Exterior wall gypboard application. Provide a true, impermeable vapor barrier that is rated 0.10 perm or less on the warm side of the insulation. Ensure vapor barrier continuity at the interior plane of insulation around the entire building envelope especially at penetrations, corners and junctions. Liquid applied or continuously seal all laps and penetrations. Do not apply vinyl or any other non-permeable finish to exterior wall boards.	Liquid applied is acceptable for block walls and other applications if approved by the Owner.	The fundamentals of creating a proper vapor barrier include developing the thermal section of exterior wall or roof; determine the dewpoint for the interior environment, locating the dewpoint within the wall construction; verifying the vapor barrier location and the thermal performance of the insulation relative to the dewpoint location. The psychometric chart is used to determine relative temperature, humidity and dewpoint readings. There are three classifications - 1. Vapor Retarder - 0.1 perm or less 2. 1.0 perm or less and greater than 0.1 perm. 3. 10 perm or less and greater than 1.0 perm.
072600.02	Therm-Moist Protection	Vapor Barriers - Below Grade				Provide horizontal air and vapor barriers for all concrete slabs on grade unless approved in writing from Owner.		Provide under-slab vapor barrier sheets using polyolefin membranes (no polyethylene) Continuously seal all laps and penetrations. Place the vapor barrier directly under concrete slabs on grade.
075000.01	Therm-Moist Protection	Roof Slope			s	Minimum slope of actual roof deck to be 3% or greater. Adjust parapet freeboard to accommodate as needed while still maintaining roof rating of FM90 or greater. See separate roof parapet standard.		In non-precast structure conditions, construct slope in roof structure so that insulation can be installed flat at R38 without averaging. Crickets formed with tapered insulation may be used to drain corners and ponding water with approval by Owner.
075000.02	Therm-Moist Protection	Roof Drains			s	See CSI Section 221426.		Roof insulation can be reduced to R20 only within 24" of roof drains to provide drainage pocket. Roof drains will be 100% insulated with minimum 2" fiberglass insulation below deck.
075000.03	Therm-Moist Protection	Roof Design			s	All roof types and roof accessories including substrate, parapets, screenwalls, equipment and skylights will be designed to withstand a 90 mph basic/sustained wind (120 mph gusts) without tear-off or failure, or to local requirements - whichever is greater. All roof structures will be designed to 50% greater than current code for live and dead loads. All roofs will be designed to exceed Factory Mutual wind requirements and / or SPRI Wind Design Standards.		Design to most current version - FM 90 rating with a minimum 42" combination high parapet wall system. Safe parapet wall height can be achieved with an integral railing no higher than 12" above parapet wall. Railing can only be mounted to the roof side vertical wall of the parapet - providing it does not interfere with any lightning protection.

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075000.04	Therm-Moist Protection	Roof System Alternatives				Other roof systems may be considered for certain buildings. Approval to use other than BUR or EPDM requires full research and justification for variance. Additionally, approval is only granted with Owner's <u>written</u> expressed consent.		Choices are: Modified Bituminous (Atactic-polypropylene or Styrene-Butadiene or Self Adhering modified membrane), Elastomeric (Chlorinated-Polyethylene or Chlorosulfonate-Polyethylene or Polyisobutylene) Thermoplastic (Copolymer-Alloy or Ethylene-Interpolymer or Polyvinyl-Chloride or TPO -Thermoplastic-Polyolefin or Nitrile-Butadiene-Polymer) Fluid Applied Roofing, Coated Foamed Roofing, heat applied Roll Roofing, tile, slate, asphalt shingle or Class B Cedar shakes combined with a fiberglass-reinforced gypsum board sheathing (Dens Deck) to create a "Class A" roof. Note: Robert Trail Library in Rosemount has TPO roof system installed in 2008.
075000.05	Therm-Moist Protection	Roof Installation & Inspection				3rd party On-Site inspection will be provided by Owner during the roof system installation. Owner will perform thermographic evaluation within one year of roof installation.		Optimal time for thermographic final inspection would be 1-month before the 11-month warranty walk-thru.
075000.06	Therm-Moist Protection	Roof warranty				Provide a minimum 20 year no dollar limit (NDL) roof warranty by Manufacturer and installing roofing contractor. A maintenance bond may be substituted for the warranty in the Bid Document if future solvency of the installer or the manufacturer(s) is in question. Include responsibility to repair damages caused by roof leaks if due to material failure or faulty installation. Roof membranes will be maintained consistent with manufacturer requirements.		Particular attention must be paid to the actual warranty specified in the Contract. Request that a copy of the Manufacturer's Owner sign off sheet be submitted with the shop drawings for "OWNER REVIEW" !! Do not sign anything that changes the contract warranty requirements. Note: Most roofing manufacturers require sign off by the Owner for acceptance of the roofing system. It is generally combined with the Warranty Registration sheet. The Warranty Registration sheets have conditions specified in them that may not comply with the Contract requirements.
075100.01	Therm-Moist Protection	Roof Built Up				4 Ply Glass Fiber Type VI Felts - Hot mopped Asphalt with 20 year No Dollar Limit total roofing system Warranty to run from date of substantial completion. A vapor / heat barrier must be specified and installed when hot applied built-up asphalt roof are specified on metal decks to resolve fire rating from below. Issue is that when the asphalt melts through the roof weld holes or other roof penetrations, it fuels the fire. Cold applied adhesive that is Factory Mutual approved must be specified for protection board that must be installed below the insulation and actual roof membrane materials. Use of built-up roof systems will be Owner decision.	GAF Gafglass Ply 6 Owens-Corning Perma Ply-6	See CSO 75323 - Roof design for wind and uplift ratings are the same for all roof systems - BUR or EPDM. Gravel surface will be minimum of 4 lbs./sf. A 42" high perimeter parapet wall is required. Waterproofing and flashing of the parapet will be pre-approved by the Owner prior to inclusion in the design. Increased height parapet must be structurally designed to handle increased wind loading.
075100.02	Therm-Moist Protection	Roof Built Up Electrical				Pitch pockets are not permitted. Use min. height 12" curbs with weatherproof "dog houses" around electrical penetration.		Make all attempts to keep penetrations in vertical surfaces rather than in horizontal roof system surfaces.
075323.01	Therm-Moist Protection	Roof EPDM			E S	60 mil 100% fully adhered membrane and mechanically fastened insulation and coverboard. Fully recyclable EPDM membrane with 20 year No Dollar Limit total roofing system Warranty to run from date of Substantial Completion. Roof Assembly will be UL Class A fire rated and Class I-90 Factory Mutual requirements. Self-adhering membranes are NOT allowed (must be low-rise foam adhesive)! Use 90 mil for specific high durability areas such as under a vegetated roof.	Firestone, Carlisle SynTec	County standard is R38 . Fully evaluate potential energy cost savings with soiled roof at R38 against cost of investment and maintenance of high reflectance membrane.

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075323.02	Therm-Moist Protection	Roof EPDM - Mechanical Fasteners				Membrane Roofing Fasteners will be corrosion resistant and sufficient length to properly anchor the roof system to the roof deck to achieve FM90 or greater wind load rating. Pullout tests will be conducted prior to the installation of the fully adhered membrane.		Perform a minimum of 10 pullout tests for up to 50,000 square feet (4,650 square meters) or portion thereof on each roof elevation or change in substrate. Perform the pullout tests at random areas of the roof including corners, perimeter and field to provide a representative sampling of overall roof performance. The location of the pullout tests will allow for 50% more tests in the corners and perimeter than in the field. It may be necessary to perform additional pullout tests beyond the minimum number required. This includes but is not limited to occasions when 1. pullout values vary significantly 2. tests are performed in substrates that are inherently less consistent such as lightweight concrete, tectum or gypsum 3. there exist multiple questionable areas 4. local building codes require additional tests 4. roofs with high wind loading will have additional pullouts tests conducted in all corners. Ref - Form A - Pull out Test Report ANSI/SPRI FX-1-2001 dated May 2, 2001.
075563	Therm-Moist Protection	Vegetated Protected Membrane Roof				Requires Owner written approval		Resource - NRCA Green Roof Systems Manual 2007 - www.nrca.net. Consider fire issues during drought conditions.
076100	Therm-Moist Protection	Roof Metal/Copper				Metal or copper roofs can be specified providing a minimum 20 year roof is provided and a "non-averaged" insulation minimum value of R38 is used. Metal roof attachment must provide 100% thermal break from interior roof framing etc.		Roof design must be meet or exceed FM 90 rating. Match requirements for EPDM system. Copper roofs are to be designed to 50 years. Locate boiler stacks to prevent roof metal corrosion from exhaust gases.
076526	Therm-Moist Protection	Sheet flashing				Flashguard or EPDM as approved by the Owner.	Firestone	Through wall flashings. Flashing will be fully supported by galvanized sheetmetal to prevent sagging. Minimum 20 gauge Kynar coated steel will be used if any part of the flashing is exposed to the exterior façade of the wall.
077000.01	Therm-Moist Protection	Roof Elevations				New buildings will have no more than 3 contiguous roof levels. Minimize number of roof levels, separations and types		Owner has a library of details to be used a guideline during design.
077000.02	Therm-Moist Protection	Roof Top Equipment Wind Allowance				Refer to section 233000 for standards regarding anchoring rooftop equipment for wind loading. Minimum standard protection is for basic 90 mph winds (120 mph gusts).		
077116.01	Therm-Moist Protection	Roof parapet cap sheet metal flashing				24 gauge steel with Kynar finish. Aluminum only if approved by Owner. Anchor in vertical areas only at center of sections for full thermal expansion. All corner pieces will be prefabricated units w/o lap, mitered or field joints on corner.		Use only manufacturers who use 50% or greater recycled materials. Membrane will be installed to completely cover parapet and extend down exterior wall prior to cap flashing installation. Keeper strip and flashing will not be anchored to brick. Brick fascia will operate independently of parapet blocking. Allow 1/2" or greater vertical brick expansion. Top brick mortar joint will be reinforced 16" o.c. horizontally with stainless steel eyes and pintels. Also see comments concerning structural integrity required for all parapet walls to 42" and 120 mph sustained wind loading.
077116.02	Therm-Moist Protection	Roof parapet flashing				Run roof membrane complete up and over parapet - match roof. Spring form counter flashing will be used for all roof membrane terminations.		Spring form counter flash min. 24 gauge prefinished with sealant @ drip. Ensure that brick façade is not anchored or connected to structure or block backer wall to permit independent differential movement. For built up roof (BUR) installations a special detail will be prepared for parapet flashing and counter flashing to be approved by the Owner.
077126	Therm-Moist Protection	Reglets				Reglets will not be used. All terminations at roof wall intersects will be fully developed in wall flashing systems.		Complete details will be developed for approval by the Owner for all roof / flashing / wall terminations.
077133	Therm-Moist Protection	Roof parapets - through wall scuppers				Through wall scuppers will be constructed of one piece 1/8" steel plate - 100% hot dipped galvanized - installed in opening oversized 1/2" about for sealant with a minimum lip extension of 4" beyond finished wall.		Use only for overflow drains and roof drains for areas without internal roof drains. E.g. elevator, stairwell and mechanical small area penthouse roofs.

CSI	Section	Item	A E s		Standard	Reference	Additional Comments
077200.01	Therm-Moist Protection	Roof Cant & Wood Blocking		s	Untreated - fully cured FSC hardwood dimensional lumber per project detail. Architect will address local fire code issues prior to specifying.		Do not specify or use fiber cant or blocking or treated lumber. Roof parapet cap flashing will be sloped a minimum of 1.5" per linear foot from exterior wall to drain onto roof. Fire resistant wood blocking may be used only if required by local code. In general - the roof system will be considered to be outside the fire rated zones of the building.
077200.02	Therm-Moist Protection	Roof Curbs		s	All roof curbing will be fully detailed to provide wind load pull out requirements. Specify that all roof curbs are to be installed by the General Contractor only. Comply with 90 mph basic wind rating for all exterior mounted items and finish panels.		Mechanical will furnish pre-made curbs to General. ID equip. in specs. NOTE: Elimination of roof penetrations is a priority. Whenever possible - vent exhaust through the exterior wall away from any air intake in lieu of penetrating the roof.
077200.03	Therm-Moist Protection	Roof parapets		s	Parapet walls will be a minimum of 42" above roof deck and roof insulation to improve roof uplift to 90 mph and provide fall protection at building perimeters. Use fire resistive wood for parapet blocking only if required by local code official.		Provide safety from falling at all roof edges that are over six feet (6') above grade or next surface. If parapet height is less than OSHA guardrail requirements, supplementary guard railing or fall protection system must be installed. If guardrail is used in lieu of a perimeter parapet structure, the railing must withstand 250 lb. of force. No stone, masonry or precast parapet caps. Fall protection will fully meet or exceed OSHA requirements at the time of installation.
077226	Therm-Moist Protection	Roof Ridge Vent	E	s	For gabled roofs - provide roof ridge vent detail same as for Thompson Park Center Project in West St. Paul.		
077233	Therm-Moist Protection	Roof Access		E	Provide internal stairways / ships ladders to roof areas. Minimum roof opening size to be determined for each project Place roof access openings minimum of 15 feet away from roof edges in strict conformance with OSHA requirements. Hatches will be fully insulated to R38, high security, provide a fall protection railing around the opening perimeter and be structurally rated to meet uplift/load capacity of the roof itself.		Owner to approve make and model of access hatch.
077246	Therm-Moist Protection	Roof walkways		s	Provide access walkways to all roof mounted equipment that protect the roof membrane and system.		Compatible with roof system. Walkway pads must be and remain firmly attached to the roofing system. Need recommendation from consultant on what to use that will stay in place and not crumble.
077253	Therm-Moist Protection	Snow Guards			Snow / avalanche guards will be provided on all steep slope metal roofs.		
078116	Therm-Moist Protection	Applied Mineral Fiber Fireproofing			Gypsum - Cementous type as defined by UL. Spray fireproofing is required for standard steel beams and columns, bar joists and metal decking, lintels and structural steel in bearing or exterior walls. All materials and construction practices used will be listed by Underwriters Laboratories for hourly rating requirements. Conform to ASTM E605-77(82) for thickness and density test methods.	Grace Monokote Isolatak Intl CAFCO 300.	Building determines 2 hour and 4 hour fire rating requirements. Minimum requirements are 2 hour for steel beams, columns, bar joists and metal decking - and 4 hour for lintels/structural steel in exterior bearing walls. Materials will be provided from a single manufacturer. Must be Factory Mutual approved. Any material that may have questionable content or is manufactured outside the United States must be domestically tested and certified to be free from any contamination or hazardous materials. Fireproofing materials will be made from post-industrial and post consumer recycled materials when available.
078123	Therm-Moist Protection	Intumescent Mastic Fireproofing			Intumescent paint type fire-proofing may be used in high traffic and visible areas only if it can be demonstrated to the Owner that a smooth high quality cleanable finish can be achieved.		Must be Factory Mutual Approved and UL Rated.
078400	Therm-Moist Protection	Firestopping			Specify product suitable for application and approved by local code official.	3M, Grace	Fire stopping will be Installed at all penetrations through fire rated partitions. Firestopping must achieve the partition fire rating. There are a number of products including putty, pillows, sealants and foams. For cable trays use removable type barrier pillows such as 3M intumescent fire barrier pillows.
079000.01	Therm-Moist Protection	Sealant - exterior			With foam back rod - up to 3/4 inch compatible with sealant.	Dymonic by Tremco	ASTM C920-87. Fed Spec: TT.S 00230C. Use appropriate grade for application. Since sustained adhesion, durability and weatherability continue to be issues, verify the correct exterior sealant with Owner prior to specifying or approving for installation. No sealant will be installed when ambient is below 32 degrees.

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079000.02	Therm-Moist Protection	Sealant - precast / masonry				With foam back rod - up to 3/4 inch compatible with sealant.	Dymonic by Tremco	Same as for exterior sealant.
079113	Therm-Moist Protection	Preformed Compression Seals				Also known as Bridge Seals. Use preformed compression seals in wall joints greater than 3/4" that are installed with very straight lines.	MM Systems Corp.	
079123	Therm-Moist Protection	Preformed Backer Rods				Used closed cell backer rods only.		
079126	Therm-Moist Protection	Preformed Joint Fillers				Preformed closed cell neoprene expansion joint fillers may be used in wall construction for areas such as building addition intersects greater than 3/4"	MM Systems Corp.	
079513	Therm-Moist Protection	Expansion Joint Cover Assemblies				All expansion joint covers will be aluminum.	MM Systems Corp., Nystrom	Architect design must be approved by Owner.
080671	Opening- Door	Locks				Owner specifies	Schlage	
080000.01	Doors	Keys				All Exterior and Card Reader Doors: Schlage Full Size Interchangeable PRIMUS 6 Pin Master Key System All other doors (unless directed by the county): Schlage Conventional Full Size Interchangeable 6 Pin Master Key System. Padlocks will use the Schlage Conventional Full Size Interchangeable 6 Pin Master Key System	Schlage Primus	Owner provides final lock cores and keying under separate contract.
						Owner will provide construction cores as needed for contractor use during construction.		Verify with Owner
						Contractor installs construction cylinders if needed.		County owns 40-50 temporary cores and keys that can be used. Verify number and availability with Owner.
						All mortise cylinders are provided by Contractor. Provide cylinder to accept Schlage Full Size Interchangeable Core (LFIC).		
						Permanent key blank will be Schlage on all locks (see above)		Contractor provides two (2) keys per new lock with (0) cut/bitted.
						Owner makes final key cuts under separate contract. Keyway will be Schlage PRIMUS for each project, by Owner.		
080000.02	Doors	Door Hardware				Mortise Locksets - Schlage L9000 Series.		Electric Strike preferred over Electrified lock. If Electronic Lock is required the electrified option preferred to be 24VDC L9080EU. Standard functions are L9080 or L9050
						Cylindrical Locksets - . Schlage ND Series		Mortise Lockset preferred over cylindrical. Electric Strike preferred over Electrified lock.
						Exit Devices - Von Duprin 99 series.		Electrified exit devices preferred to be supplied with 24VDC QEL option. Vertical Rod exit devices are discouraged.
						Deadbolts - Schlage B660P		Provide at all conference room doors that lead to public areas of the building for safety/security reasons.
						Electric Strikes - Von Duprin 6000 Series or HES 1006 Series		Von Duprin 6211 is the preferred standard strike. HES 1006c electric strikes may be used on interior card reader doors. On interior doors with a deadbolt HES 1006c with deadbolt keeper is the preferred strike but the Von Duprin 6400 with deadbolt keeper may be used.
						Electronic Power Transfer - Von Duprin EPT-10		Door cords are discouraged and only acceptable in private spaces.
						Power Supplies - Von Duprin PS914 or Altronix AL600UL		Power supplies preferred to be provided by Security contractor and centrally located with Access controller. Exit Device QEL is preferred due to low current.
						Heavy and High Traffic Door Closers - LCN 4040XP		High traffic doors are main entrances, normally closed corridor doors, and main office entries.
			Automatic Openers - LCN 4640		Where Auto openers are used on card reader doors, Access control to disable card reader side actuator button when door is locked. Request to exit to unlock door when exiting or interior actuator button to trigger access control to unlock the door. Power supplies with auto operators shall be provided by the contractor and at each opening.			
			Door Holders - IVES FS1153 or LCN SEM 7800 series		Kick down Door Holders are unacceptable. Plunger style is preferred.			

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080671.01	Opening- Door	Magnetic holds				To be specified and Installed on all meeting rooms, non-secured corridors and assembly rooms.		Use magnetic holds whenever there is a great potential for doors to be propped open for convenience.
080671.02	Opening- Door	Panic Hardware				Owner to specify manufacturer, make and model	VON DUPRIN ONLY	Focus on least amount of maintenance - provide with electric strike. Do Not Use Precision/ Stanley
080671.03	Opening- Door	Stops				Provide stainless steel door stops for all doors to protect walls etc.		Private offices may have wall stops. All others will be firmly anchored to the floor or an integral part of the door hardware.
081000.01	Opening- Door	Passage			s	All managers and supervisors private office doors will be individually key locked.		
081000.02	Opening- Door	Exterior Vestibules			E s	Design of vestibules shall be such to mitigate the effects of wind (perceived wind tunnel effect).		This may require automatic door operators which are separate for each door in the series.
083116	Opening- Door	Access panels				24 x 24 inch - into all non-accessible areas i.e. restrooms		All locking. Access panels will be handled case by case. Access doors for jail area plumbing chases and all public ganged toilets will be full height.
083413	Opening- Door	Garage Service Doors			E s	3" thick energy saver with window at eye level	Midland Garage Door Co.	Midland door will be used for small dock openings.
083413	Opening- Door	Large Door Openings			E s	Types of large door specifications will be handled case by case, be very energy efficient with multiple doors interlocked to conserve energy and retention of tempered air.	Bi-Fold Doors	Large Truck access doors will be high insulated biparting with hydraulic operators or high energy efficient high speed roll-up doors. Light weight doors are not to be used for high security areas or detention areas vehicle sally ports.
084119	Opening- Door	Exterior Entrances				Anodized or powder color coated aluminum is the standard. Consider 316 stainless steel at staff and other non-main entry doors. Maximum door opening heights will be 7'-0" unless approved by Owner.		No coated ferrous metal / steel or field painted doors except for jail areas. Any exception must be approved by Owner in writing.
084229	Opening- Door	Main Entrance				Air lock vestibules will be provided between buildings or building sections that are independently ventilated.		
084233	Opening- Door	Main Entrance - High Security				Security revolving doors - Use specification for Judicial Center check point entry.		
084400.01	Openings - Window	Window Frames			s	Window Curtain Wall System to provide minimum R-value of 7	Wausau or Kawneer	Specify glazing installation and reglazing from the interior for 3rd story and above. Verify need for interior "removable-type" stops. Interior stops only will be used for all window installations above 30 feet.
084400.02	Openings - Window	Curtain Wall and Glazed Assemblies				In general - all exterior window systems in County buildings will be curtain wall assemblies having an integral 100% thermal break. Only premium high performance systems will be specified from each approved manufacturer. U-Factor to be less than 0.30 for all installations and less for large installations. Type of glazing will be determined by the County Project Manager based upon the security needs of the facility. Highest current performance is triple glazed with Argon or Krypton gas fill.	Wausau, Kawneer (Alcoa Co.)	Wausau - HP-WALL w/triple insulated glazing/ 2 low e panes (no neoprene) Kawneer - 7500 Wall w/triple insulated glazing/ 2 low e membranes. Laminated glass may be needed for storm proof high impact applications above 100 mph. Verify acceptable manufacture systems with Owner during design. Note: Visionwall 3 and 4 element units are not options at this time.
084400.03	Openings - Window	Curtain Wall and Glazed Assemblies - Sun Control				Owner to approve case by case. These refer to external sustainable design components that provide building and interior shading.		Each window system manufacturer has various types of sun control (shelves, awnings, blinds etc.) that can be specified as part of the curtainwall system. Verify with Owner during design. Any approved system cannot interfere with window cleaning above 2 floors. Note: Exterior shades are highly susceptible to wind and hail damage.
084500	Openings - Window	Translucent Panels			s	Translucent panels may be used only with Owner approval. Minimum requirement is that all panels be 100% thermally broken and have a U value of 0.05 or less (R value of 20). Maximum light transmission will be 20%. NOTE: NO GLASS BLOCK IS PERMITTED IN ANY EXTERIOR WALLS.	Kalwall Corporation	Translucent faces shall be manufactured from glass fiber reinforced thermoset resins specifically for architectural use. Thermoplastic (e.g. polycarbonate, acrylic) faces are not acceptable. The full thickness of the exterior face shall not change color after five (5) years outdoor exposure. Panels will have a full thermal break. Faces shall conform to FM 4411 Class 1 wall system approval. Nanogel (Kalwall) with 20% light transmission provides R20 per Manufacturer. Panel design must equal or exceed 90 MHP basic wind rating for new construction. Typical installation for translucent panels is clerestories.

CSI	Section	Item	A	E	s	Standard	Reference	Additional Comments
085000	Openings - Window	Borrowed Light			s	Interior windows will be provided to allow natural daylight to reach interior occupied spaces. Windows will be a minimum of 24" above finished floor or grade and at least 24" below finished space ceilings.		
088000.01	Openings - Window	Glass	A	E	s	Use triple glazed high impact resistant glass with 2 premium low-e surfaces, 1 1/4" to 2" max depth and lowest U value attainable in industry (0.15 summer or less). Laminated section to sustain 120 mph or greater. Airspace gap to be 5/8" with 90% Argon fill. Exterior Low "E" (emissivity) - For new Construction use clear with effective UV reflectance to minimize UV to <1%. For existing buildings use - green, blue or gray tint to match. In all cases, Owner will approve exterior glass color. In general, existing glass color will be matched to original buildings for additions unless directed otherwise by Owner representative. For entrance doors, borrowed light and public counters - All interior glazing at public level will be a minimum 1/4" tempered glass including entrance doors and sliding service windows. All exposed glass edges, including tempered glass will be polished.	Custom Glass Products or Equal	Maximum acceptable U-Value of insulating glass is .18 Winter and .15 Summer. U values to be calculated based upon a 70 degree variation from inside to outside 70/0 degrees with outdoor air velocity of 15 mph for winter and 75/89 degrees with 7.5 mph outdoor air velocity for summer. Glass to have Solar Heat Gain Coefficient SHGC of less than 0.30. Visible Transmittance (VT) greater than 0.55. All glass will have Glazing Luminous Efficacy (Ke) of more than 1 (Ke = VT/SHGC). ANSI Z97.1 Standard and Federal Standard CPSC 16 CFR 1201. Federal Standard CPSC 16 CFR 1201, as well as state and local codes, require safety glazing material where the glazing might reasonably be exposed to human impact. NOTE: 100% post manufacturing glass is recycled at the plant. NO recycled glass from consumers is used at any float glass plant due to cost and potential for introduction of contaminants into the molten chrome float process. Average pay back ROI is 30+years. If a new or improved insulated glass system is to be considered, successful use and return on investment must be accurately demonstrated.
088000.02	Openings - Window	Testing			s	Windows and complete window systems will be tested as directed by the Owner. Water test all windows, but air infiltration test only a small sampling. Testing Method B will be used from AAMA 503-14 Voluntary Specification for Field Testing of Newly Installed Metal Storefronts, Curtain Walls and Sloped Glazing Systems (current as of 12/18/17). Method B requires testing of the window, perimeter sealants and wall assembly conditions. Do not specify Method A. If testing sample areas fail - then all exterior window systems will be flood tested in accordance with AAMA - 30 psi "Hose Test".		At a minimum, Contract Documents will require two Owner provided random tests of each type of window system used for new construction. Retesting of failed tests will be at Contractor's expense and Contractor will reimburse Owner for associated independent professional inspection and review costs. AAMA (American Architectural Manufacturers Association) has also developed "Voluntary Guideline for Forensic Water Penetration Testing of Fenestration Products." (AAMA 511-08). This test method would apply to the Warranty period of the window system - and will be considered as part of these standards. Also evolving is the use of clear fluorescent penetrating dye and black light to examine parts for defects or damage. The water soluble dye creates a path from the exterior to the interior without damaging finishes.
088000.03	Openings - Window	Glass		E	s	No operable windows for security and energy efficiency reasons.		Operable window will only be considered if specifically required by a monetary grant received by the Owner. Any request for consideration of operable windows in County buildings in the future for sustainability or energy efficiencies can only be approved by the Owner.
088000.04	Openings - Window	Glazing - High Insulation Value				Item held for future potential alternatives.		
088819	Openings - Window	Glazing - Hurricane Resistant		E	s	Typical building glazing should be rated for 90 MPH basic wind rating. 120 MPH SUSTAINED (hurricane glass) will be considered for all new construction and used for weather or security sensitive program areas in all buildings.		
088853	Openings - Window	Glazing - Security				Use impact resistant high-security glass in all high security areas including cell blocks, dispatch centers, etc.		
088856	Openings - Window	Glazing- Ballistics Resistant			s	Glass and frame assembly will withstand up to 9 mm high caliber rifle shot.		

CSI	Section	Item	A	E	S	Standard	Reference	Additional Comments
092000.01	Finishes	Wall Gypsum Board			s	5/8" interior - 5/8" water and mold resistant Type XP all walls. Consult with Owner regarding installation of exterior wall insulation and ventilation/vapor barrier protection of exterior walls. Use only compatible "mold resistant" joint and taping compound. Water resistant - wet application Cement Board or Nyboard only will be used in wet applications including restrooms, locker rooms and janitors closets. Adjoining spaces will have cement board or Nyboard installed for the first 4 feet above finished floor. The 5/8" air gap will be provided at the bottom of all cement board.	Gold Bond XP, National Gypsum Permapabase Cement Board Nylon Board	Use no vapor barrier. Leave 5/8" air gap / anti-wicking space between structural floor and sheet rock. Extend vinyl base to meet finished floor. Where raised access flooring is used, Extend sheetrock only to top of raised flooring at all perimeter walls. Design all rooms to standard gypboard widths and lengths to eliminate construction waste. Standard gypboard sizes are 4'x8', X9', X10' and X12'. Consider new "non-gypsum" product magnesiacore in lieu of cement board for wet applications. This product will not support microbial growth. See www.magnesia.com
092000.02	Finishes	Wall Gypsum Board - Sound Proofing			s	5/8" paperless, mold-resistant soundproof drywall. This standard may be substituted for XP Board perimeter sheathing applications. Provide 5/8" gap between floor and wall board.	DensArmor Plus	Sound transmission rating of 50 to 58. Standard 5/8" sheetrock is 75% or less sound rating. Dens is a Georgia-Pacific product - www.gp.com. Consider Densarmor Plus 528 for rooms needing sound insulation.
093013.01	Finishes	Wall Tile				Wall tile can be porcelain or ceramic. Sizes can vary but reduced grout joints is ideal. All restroom walls, plus wet area walls are full wall tile preferred.		Designer to be mindful of various tile manufacturers for grout joint alignment and thickness tolerances.
093013.02	Finishes	Floor Tile				Floor tile to be porcelain. Sizes can vary but reduced grout joints is ideal. Coordination of tile size and pattern at drains need to be discussed/approved by County PM. Floor tile needs to meet current DCOF standards of ≥0.42.	TCNA Handbook , ANSI A-3.3.7, ANSI A137.1	Refer to TCNA for standard tile patterns and offset when tiles exceed 20" or more to avoid lippage. When specifying larger format tile rectified tile is ideal to avoid grout alignment issues. Lead time to be listed as a line item in specification. If long lead time exists, coordination with Dakota County and GC to understand time lines and potential delay to project delivery.
093013.03	Finishes	Grout & Grout Joints				Grout joints not exceed 1/8". Use cement based grout with stain resistance.		Laticrete or similar
093013.04	Finishes	Tile Cove Base				In public restrooms and wet environments cove base is required. Cove base can be specified through a tile manufacturer with either wall or floor tile. If tile manufacturer does not provide a cove base a substitution of a stainless steel cove based profile.		Accepted cove base profile include Schluter Dilex AHK or AHKA. Substitutions to be approved by city building official.
093013.05	Finishes	Tile Edging				All outside tiled edges of wall tile to have tile finishing and edge protection. Tile adjacent to different floor finish or a higher or lower elevation need tile transition strip.		Accepted wall edge profile is Schluter- Jolly. Accepted floor finish at same elevation is Schluter - Schiene. Sloped transitions need to be determined with existing conditions.
093016.01	Finishes	Floor Quarry tile			s	For new kitchen installations, or when patching existing, use 6"x6" minimum - dark grout - limit use of quarry tile and provide only when requested by Owner. If existing building - check slab tolerances to determine thin-set vs mud-set tile. If new building adjust specification for substrate tolerance and floor flatness to accept thin-set	ANSI A108.02-4.0/4.1	Use 50% or better post consumer - recycled materials. Special tile and grout sealer is required.
095123.01	Finishes	Ceilings Acoustical			s	3/4" thick 2' x 2' square ASTM C635 intermediate duty. Tiles will have recycled content to be determined by Owner. Ceiling tiles will be recycled for all renovation projects. Specify only 1" grid. http://www.armstrong.com/commerceilingsna/article10790.html - Product to be Guaranteed for 30 years against sag, mold, mildew and bacteria. Fire Rating to be UL Class A.	Armstrong Optima 3150 (Robert Trail Library)	Wire minimum 12 gauge pre-stretched. Provide 10% spares to Owner and include recycled content certification. Provide for minimum noise reduction coefficient NRC>.90 and lighting reflectance rating of 0.90 or higher for indirect lighting . Product must have recycled content of 70-75% and an expended materials recycling program in place at time of purchase. Note: High reflectance fiberglass panels will not support speakers, antennas or friction collar type light fixtures. Separate structural panels area required for these items.
095123.02	Finishes	Ceilings Concealed Spline			s	Interlocking, concealed spline ceilings are not permitted in any location.		

CSI	Section	Item	A	E	s	Standard	Reference	Additional Comments
095323	Finishes	Metal Acoustical Suspension Assemblies.				SPECIFY ONLY 1" Standard width for exposed metal grid.		
096000	Finishes	Walk-off Carpet @ Entry Vestibules				Walk-off carpeting (see carpet standards appendix) shall be used in lieu of recessed floor mats.		
096513.01	Finishes	Floor Cove Base			s	VOC adhesive - 60% + Recycled. 4" Rubber Straight base. For major new installations - Color: Burnt Umber. In other areas - try to match existing.		Non-rubber base (wood, stone, etc.) may be used in certain public accessible areas. NO carpet base will be installed at exterior walls. For all detention areas, security caulking will be used in lieu of base flashing.
096513.02	Finishes	Resilient Finishing Accessories				Where two flooring finishes (carpet to resilient flooring) are adjacent to each other a floor transition or threshold will be required. When new specification occurs: Johnsonite: Burnt Umber		Where adjacent flooring finishes differ in height/thickness an adapter will be required. Height can not exceed 1/2".
096519	Finishes	Floor Resilient tile			s	Vinyl Flooring - VCT or LVT (Luxury Vinyl Flooring) w/ backing layer and adhesive. Both are acceptable at areas where flooring would get water damage. (Recommendation) Use of linoleum product can be discussed, particularly to match adjacent/existing.		Both are acceptable at areas where flooring would get water damage. convenience stations 3' minimum. This material to be applied in areas that have the greatest potential for damage by activity i.e. food, coffee, duplicating equipment, laboratories, etc. Janitor closet - convenience stations 3' minimum. This material to be applied in areas that have the greatest potential for damage by activity i.e. food, coffee, duplicating equipment, laboratories, etc.
096613	Finishes	Floor Terrazzo			s	Full depth terrazzo. Use in High Traffic entry and gathering areas only. Pattern will be standard size 2 (1/4") or as approved by Owner. 20% recycled glass will be included in the terrazzo chip mix. Terrazzo system will be 2" bonded including .5" terrazzo topping on structural concrete slab. Concrete slab will be minimum of 5". Terrazzo dividers will be brass 1/8" wide or as approved by Owner. Contraction and expansions joints will be placed so that no cracking occurs in the terrazzo field. Use only white Portland Cement.		Create avenues of terrazzo in large atria or lobbies. Carpet for balance of floor. Follow recommendations from the NTMA - National Terrazzo & Mosaic Association, Inc.
096813.01	Finishes	Floor Carpet Tiles	A		s	Unitary back - 100% Nylon 6,6 face materials. Face density will be 6,000 or greater. Design selection will be only from existing manufacturers standard patterns, designs and colors. No custom colors or patterns. Self releasing adhesive will be used for carpet tiles in all areas. Owner to determine schedule for use of carpet squares and roll carpet for special applications such as stairways with Architect. Custom colors may be used to match existing if necessary but only with approval by Owner. Adhesive: Adhesive must be water based - releasable and have low to no calculated VOC's. It must also be nonflammable and water-resistant. Carpet must pass Federal Flammability Standards and be CRI Green Label Certified.	Interface, Mohawk, Shaw, Mannington	Carpet density will be equal for each product selected. Minimum carpet density is 6,000. Factory cured - warranted for 15 years, non-prorated against edge ravel, delamination, zippering, loss of resiliency and excessive surface wear. Minimum of recycled content is 28% - target is 40-50%. Prove recycled content and recycling of old carpet materials. As of 10/10/00 there is an evolving issue concerning pvc carpet backing flame spread and safety. VERIFY RECYCLED CONTENT IN EACH and gain prior approval from Owner prior to proceeding with pattern and color selections. Four (4) or less carpet patterns/colors will be used per facility or renovation project. For Shaw carpet- specify "ecoworx backing" and "ecosolution face yarn." DESIGN /LAYOUT WILL MINIMIZE CARPET WASTE. Note: A new Gridlock type carpet tile has been developed that requires no adhesive. It has solid dimensional backing and interlocks wall to wall as on carpet unit. Manufacturer is Interface FLOR, Inc.

CSI	Section	Item	A	E	S	Standard	Reference	Additional Comments
096813.02	Finishes	Carpet Recycling			s	ALL CARPET purchased will have the capability to be recycled or disposed of by alternative methods except landfilling. Specify recycled nylon backerboard in appropriate applications. If Custody chain for recycling cannot be established - use local waste to energy plant with verifiable delivery receipts for all disposed Dakota County carpet.		RECYCLING OF CARPET INTO NEW CARPET OR OTHER PRODUCTS - The 1st Goal is to maintain installed carpet as long as possible to get full value of the installation and reduce the need for disposal. If carpet is in very good condition, there are a few companies in the Metro that reuse carpet. Various manufacturers offer recycling programs at the end of the life of their carpet. A few also offer recycling of the carpet being replaced. There is a careful balance between the cost and consumed energy in the recycling process since most of the mills are in Georgia. Each option must be carefully researched and benefits analyzed for each purchase. CERTIFY THAT THE RECYCLER OR REUSE IS NOT JUST A STOP ON THE WAY TO A LANDFILL.
096900	Specialties	Floor - Raised Access			s	24" by 24" all office areas. Consider re-engineered after market panels for re-use from panel recycler. Use bolted stringer type system only for all raised floor applications. Minimum floor load capacity will be 1500 lbs. concentrated loads. Specify the correct floor load and type of flooring for the particular application.	Donn Corporation Floating Floors, Inc. Tate Access Floors, Inc.	Flooring will provide 12" to 18" clear height to permit underfloor air plenum. Floor panel system will include occupant adjustable registers, receptacles with 5' flex conduit for distribution of power, and cable trays for data, security, fire and telecom wiring. All underfloor wiring will be supported from the stringer and pedestal support system. No conduit, ductwork or wiring will be installed within 1/2" from floor.
997200	Finishes	Wall Coverings				If it is used, it cannot be applied to exterior walls. If wallcovering is selected - Type II (20-32 oz) Commercial Grade.		Generally avoid specifying paint where wall covering has already been used.
099123	Finishes	Wall Paint Interior Surfaces			s	NO - VOC interior - use color schemes from manufacturers standard palette to eliminate addition of VOC pigments. Evaluate use of recycled paint on a case by case basis. Always provide a minimum of 3 draw-down samples for submittal approval.	Glidden, Benjamin Moore, Sherwin Williams	Eggshell or semi-gloss finish - no flats - Manufacturer and contractor must demonstrate 100% recycling of buckets - no land fill disposal. When considering recycled primer - a test area must be coated and allowed to completely cure prior to Owner approval for use to ensure the material is suitable for the application. Specify that contractor will remove all leftover paints, sealants and adhesives from site. All excess full gallon paint to be turned over to the Owner for future use.
099659	Finishes	High-Build Glazed Coatings				In detention areas, this coating system is preferred in all showers to form a continuous non-tiled/grouted waterproof finish.		The PrimeCoat system has been used by the County for retrofit applications. Other similar systems should be explored for new build applications. So as not to single-source a product, alternates including High-Performance Coatings (09-9600) should be considered.
101000	Specialties	Visual Display Surfaces				Marker Boards and tack boards will be specified by the Architect. All items will be hung on carrier hardware or wood furring. <u>No items will be directly glued to any gypboard surfaces.</u>		
101400.01	Signage	Interior Signs				All sign material will have recycled content. Signage will be included under separate contract to the Owner. Signage specification will be prepared by the Project Architect and approved by the Owner.		Provide all code required signage (elev equipment, egress, restroom etc.) plus public meeting rooms and suite entry signage. Signs within an office suite, including those for cubicles are the user's responsibility. Signage Standard lettering, Etc will be provided by PM. Signage standard will be the same as the Northern Service Center. Also see comments in Furnishing section.
101400.02	Signage	Interior Signs - Library	A			The Dakota County Library has specific terms for wayfinding.		Project plans and any signage produced should align to these standard wayfinding terms.

CSI	Section	Item	A	E	S	Standard	Reference	Additional Comments
102113	Specialties	Restroom Partitions			s	Consider the fire resistance of partitions as paramount. Dimpled, heavy gauge stainless steel, or modified plastic partitions, with heavy duty continuous piano hinges are to be used. Use only 316 Solid Stainless Steel hardware. Use hollow pin torx fasteners with 5 year guarantee against any corrosion. Type 304 stainless is not acceptable unless specifically approved by Dakota County's CPM Project Manager. Plastic partitions can no longer be specified as 100% recycled plastic for water closets and urinals, unless a fire retardant additive to ensure UL listing compliant is provided AND unless specifically approved in writing by the CPM Project Manager.		Partitions will be structurally supported from the ceiling. Floor mounted partitions can only be used with Owner written approval. For large ADA toilet enclosures - provide solid walls between adjacent unit to partition door. Avoid Poly Solid Plastic by Metpar Corp. All doors to receive coat hooks secured with fasteners to bear heavy loads.
102226	Specialties	Operable Partitions				Use specification for Northern Service Center as standard.		FM confirms that NSC partitions are working OK. Installer has been responsive to maintain partitions.
102613	Specialties	Corner Guards				Provide at all corridor and high use area corners. Corner guards will be surface mount only with 3" X 3" 2 piece snap on design.	Terpromark	Do not use recessed type. Use Terpromark TCG-75S series aluminum retainer, pvc impact absorber, vinyl cover with end caps. Color selected by Architect, clear can be used at staff areas.
102623	Specialties	Protective Wall Covering				Provide a sheet of stainless steel to 4' height minimum around slop/floor sinks (often in Janitor's closets). Stainless steel is preferred over the otherwise commonly used FRP sheet.		
102813.01	Specialties	Restroom Towel Dispensers - Cloth			s	Cloth dispensers are no longer used at the County. In the past, they've used at Parks facilities for a 2nd means of drying hands (beyond the standard electric hand dryers).		Cloth dispensers are no longer used at the County.
102813.02	Specialties	Paper Towel Dispensers			s	Provide stainless steel slim line - multifold (3 Fold) paper towel dispensers in all non-park restrooms, kitchenettes, laboratory and public health examination rooms. No paper towel dispensers shall be used at Parks facilities. Locate near sinks to avoid drips. Architect shall still provide location.	Bobrick B-262	New wall mounted dispensers provided and mounted by Owner.
102813.03	Specialties	Electric Hand Dryers				One electric hand dryer for every two sinks at public restrooms. No high velocity driers in "noise sensitive" areas. Locate in an area so as to avoid drips.	World Dryer Corps. Model # Q-973A, with stainless steel shroud including "SteriTouch" antibacterial protective finish (or equivalent as approved by the County).	New wall mounted dryers provided and mounted by Contractor.
102813.04	Specialties	Soap Dispensers				Owner provides soap dispensers. Architect to provide location.		Convert to volume fed foam type dispensers to eliminate waste.
102813.05	Specialties	Combination Paper Towel & Semi-Recessed Trash				Provide semi-recessed stainless receptacles.	Bobrick B-3942	Owner may provide free standing units in lieu of built in units. Freestanding would include a black "step on" (hinged lid) trash receptacle and a green organics container for paper towels.
102813.06	Specialties	Mirrors at 2 or more Sinks				Provide mirrors from top of vanity to light fixture or ceiling. Mirrors are to be mounted with concealed security fasteners.		Use best quality impact resistant glass for all courts and high traffic areas. Mirrors will be sealed between frame and glass to prevent chemical damage to mirror during cleaning.
102813.07	Specialties	Mirrors at a single Sink				Use a tempered and framed 24x36 solution.	Bradley 781-24362	Bottom of reflective surface (not frame) to meet MN Accessibility Code.
102813.08	Specialties	Toilet Paper Dispensers				Provide Bobrick B-2740 unit. Use 2 units in each stall for 4 rolls in large volume areas.	Bobrick B-2740	
102813.09	Specialties	Sanitary Napkin Disposal Receptacles				Provide hard surface "cleanable" disposal units with disposable liners. Mount all units ahead of water closet. No receptacles will be mounted behind or below toilet. Stainless steel box receptacles with uncleanable interior corners are not acceptable.		Evaluate type that empties from bottom similar to hospital installation.

CSI	Section	Item	A	E	S	Standard	Reference	Additional Comments
102813.10	Specialties	Baby Changing Stations				Provide in both male and female public restrooms. Units will be plastic and surface mounted.	Koala Bear Kare KB100	Do not place units within handicapped toilet stalls.
111313	Equipment	Dock Bumpers			s	Constructed of 100% recycled "post consumer" tire rubber material.	Durable Corporation	
111319	Equipment	Loading Dock Levelers				Specify same electric - hydraulic unit installed at Northern Service Center	Rite-Hite	Provide for buildings 100,000 sf or larger.
112300	Equipment	Laundry				Commercial Washers and Dryers. Washers and dryers will be considered case by case. Residential type washers and dryers are not installed in County Office Buildings due to water damage and venting problems.		Industrial washers and dryers for Jail, JSC. Parks Dept. provides laundry mat type at Camp Grounds.
113113	Equipment	Kitchen Appliances				Owner's Project Manager will coordinate purchase/selection of appliances (refrigerators, microwaves, dishwashers, etc.) with Facility Management Purchasing Technician.		Color and manufacturer selections may be predetermined.
115113	Equipment	Automated Book Storage & Retrieval Systems	A			Automated Material Handler (AMH) systems for libraries are an FF&E item, but must be coordinated within the design of any library project.	see "115113 - AMH Summary for DC Libraries.PDF"	A dedicated fire suppression system for the exterior book drop is REQUIRED and must be provided by the AMH vendor. AMH will also have a connection to the building's fire alarm system. Some manufacturers will submit without the required fire suppression system, check all submissions.
115123	Equipment	Library Cantilever Stack Shelving	A			Stack shelving for Libraries are typically 25" in total width (end cap) and vary in height. Although shelving is an FF&E item, it must be coordinated within the design of any library project.	see "115123 - Library Shelving Specifications for DC Libraries.PDF"	Normally procured through a CPV contract.
122113	Furnishings	Window Blinds			s	1) Standard is 1" aluminum horizontal louver blinds. Color chosen by Architect and approved by Owner and generally should match the color of the window frame. 2) Opaque roller window shades should be used for "Lockdown /Emergency Refuge" areas with doorway glazing adjacent to public areas.	Levelor	Manufacturer must demonstrate commitment to sustainability and provide accurate data on the amount of recycled content used in the manufacture of all blinds systems. If a wood horizontal louver blind is approved by the Owner for a specific application, the manufacturer must demonstrate that only FSC certified lumber or equivalent is used in the finished product. No exotic species will be used for any wood application. Wood will be oak, cherry, maple or poplar.
123600.01	Furnishings - Countertops	Plastic Laminate			s	Plastic laminate tops shall be used in non-wet areas.		Vertical and non - wear surfaces can be standard color plastic laminate. Wheat Board can be used in certain approved applications. Sunflower Board is NOT to be specified in County buildings.
123600.02	Furnishings - Window Sills	Solid Surface			s	Use solid surface (Corian or comparable) at window sills. See below - all countertops are to be quartz. Windows sills will be 1/2" Corian® solid surfacing unless otherwise designated by Owner.	Corian by Dupont	There are approximately seven different price points for Corian. Select from the lower end (bottom third) price point products.
123600.03	Furnishings - Countertops	Quartz				Use in wet locations and select areas ONLY as approved by the CPM Project Manager. Quartz - 2cm on appropriate substrate. Preferred in fully functioning kitchen areas that do not otherwise require stainless steel counters.	ASTM C616/C616-15	Mitered Straight Edge. There are different price points for Quartz. Select from the lower end (bottom third) price point products. Do not need to do brand specific.
124813	Furnishings	Rugs and Mats	A			Provided by Owner except for entry vestibule knock off mats. Exterior Entrance Floor Mats and Frames will be specified and approved by Owner. Contractor will provide both as part of construction contract.		See also section 096000 for entry vestibule matting requirements.
125000	Furnishings	Standards	A		s	Owner standards are included by reference and will be further developed and expanded upon by Owner and Designer on a project by project basis. Use fabrics with recycled content and furnishings that can be repainted, reupholstered and re-used..	County Policy #4400	Furniture standards by Owner. Percent of recycled content will be based upon product availability and life-cycle cost effectiveness.
125513	Furnishings	Detention Bunks				Free-Standing Double Bunk Beds. Bottoms: Two 10 gauge perforated steel sheet, front and back flanged 2" down and up, will all corners rounded. Frames: 2" x 2" x 3/16" steel angle welded securely to legs and bottom pan. Legs: Four 2" x 2" x 3/16" steel	Chief Industries	NO GAPS BETWEEN BUNKS AND WALLS. Current mattress dimensions are 26" x 75-1/2" - For new cell block construction - address issue of single occupancy initially and double bunk retrofit in selection of bunks.

CSI	Section	Item	A	E	S	Standard	Reference	Additional Comments
125516	Furnishings	Detention Desks				Top: 10 gauge stainless steel, flanged 1-1/2" at back and down in front, with 15" galvanized steel towel bar. Top - 36" x 15-1/2". Seat: 12" diameter, 16 gauge stainless steel with arm to swivel under desk. Shelves: 2 shelves with sides, 12 gauge.	Chief Industries	No gaps between desk and wall.
125519	Furnishings	Detention Stools				Seats: 12" diameter, 16 gauge stainless steel. Seat Supports: 2- 3/8" diameter black iron pipe support and mounting plate with security screws. Height: 18". Shop primed.	Chief Industries	
125523	Furnishings	Detention Tables				Table Top: 10 gauge stainless steel. Supports 3" x 3" x 3/16" and 4" x 4" x 3/16" steel tubing, shop primed. Seats: 12" diameter, 16 gauge stainless steel.	Chief Industries	
125526	Furnishings	Detention Clothes Hooks				Auto Release Clothes Hook(s). 14 gauge Type 304 stainless steel, all welded construction. Security screws.	Acorn	Model 1830 - Single Hook. Model 1828 - Four Hook Panel
125583.01	Furnishings	Detention Mirrors				Type 2 - 16" x 12" Rear mounted mirror. Frame: 14 gauge Type 304 stainless steel. Mirror: 20 gauge Type 304 stainless steel polished to a No. 8 architectural finish.	Bradley Corp	Model SA01- Rear/Chase Mount. Model SA03 - Front Mount.
125583.02	Furnishings	Detention Toilet Paper Holder				Type 2 - Seamless recessed cylinder. Type 304 stainless steel. Security Screws.	Acorn	Model 1840-FA.
125583.03	Furnishings	Detention Grab Bars				Type 2 - Straight and L-shaped corner extruded aluminum bars, with integral continuous angle mounting profile and grip and radius edges.	Safebar	Through wall fastener anchors only. Fasteners will be 316 min 3/8" diameter thru bolts.
125583.04	Furnishings	Detention Cuff Rings				Stainless Steel	Bob Barker	Model BBCR
125900	Furnishings	Systems Furniture	A		s	Use Countywide standard for Systems Furniture and current Adjustable Workstation Guidelines. Fasten panel ends directly to wall where possible. Furnishings, fixtures and equipment will be developed by Owner and Designer on a project by project basis. Fully coordinate panel systems with power, fire systems, extinguishers and thermostats. Current Standard: Refurbished Herman Miller Action Office 2 (AO2) 67" High minimum. Height can be composed of panel and glass heights. Preferred panel height is 53" with 14" of upmounted glass (clear or frosted) to achieve 67" High minimum overall. Keep workstation entries to 36" minimum (may require two 30" panels on an 8x8 entry).		Do not put any panels parallel/adjacent to walls or windows. Consider reconditioned panels for re-use. Attach panels to walls when approved by Owner. Leave walls open and accessible especially at exterior perimeter. Open frame panels are required next to windows where fin tube (radiant heat) exists. Furniture layout plan will be completed prior to and fully coordinated with wall switches, fire pulls etc. Panel system modification will not interfere with final fire system locations approved by local code officials. Need to periodically inventory excess systems furniture for re-use.
129200	Furnishings	Interior Planters				Service Centers will have permanent interior planting beds.		
129300	Furnishings	Bicycle Racks				Coordinate with specifications and Figure 7.6.1 from the County Park Standards - currently "Dero's Heavy Duty Hoop Rack at 2" dia. grade 304 satin finished stainless steel piping" for all buildings.		Number of racks will be decided by Owner case by case and zoning codes.
131900	Special Construction	Kennels & Animal Shelters				There will be no interior to exterior accessible animal kennels in any County building.		
133123	Special Construction	Fabric Structures				For salt and large area outdoor storage that requires roof protection for environmental run off potential - Tensioned Fabric Structures with 20 year minimum warranty will be specified.		
142000	Elevators	Construction			s	Emergency power off with auto return to main level. All passenger elevators will be high speed and have high efficiency center parting doors. Freight elevators will be oversized for height and side parting oversized doors. Only Geared Traction freight and passenger elevators will be used for new or renovated construction.		Cars will gently return to main floor on power off and door opens. Owner requires center parting doors on all passenger elevators. California style vandal resistant call stations will be used in public lobbies and elevator cars. Provide for traveling communications and security wiring in elevator design. Clarify requirements with Owner during design. Consider new-type traction elevator that requires no head house for retrofits.
148413	Conveying Equipment	Window Washing Scaffolding			s	Install permanent swing stage transport and dolly at roof lines for all buildings over 3 stories.		

CSI	Section	Item	A	E	s	Standard	Reference	Additional Comments
211313	Fire Suppression	Fire Life Safety				All areas will be 100% sprinkled. Density of sprinklers will be determined by Factory Mutual standards and Current Owner Insurance carrier recommendations with Owner approval. Insurance Carrier is Facotry Mutual (FM).		Provide Concealed pop-down heads in all public areas/meeting rooms. All buildings 5000 square feet or larger will be 100% fire sprinklered. Buildings smaller than 5000 square feet do not need to be fire sprinklered unless required by local code official or owner. Adhere to most recent or stringent code requirements.
		Book Drops				County uses Novec 1230 or FM-200 systems. Fire Trace, Fike, and Kidde system are used at the libraries for this purpose. This suppression system needs to notify the onsite fire alarm panel upon activation.		All library book drops have their own suppression system to extinguish any fire which may pass through the library book drop.
		Fire Pumps				A fire pump will be installed on any building which does not meet the pressure standards for proper use.		The fire pump is to be appropriately sized for the building and located near the main line into the building.
		Chemical				Chemical suppression systems are only installed as required by NFPA or at the direction of the county. When possible, the area covered by the chemical suppression will be controlled by the main building's fire panel (main panel should also be used as a releasing panel). When the main panel cannot also act as a releasing panel, a Honeywell Notifier panel will be used as a releasing panel. The releasing panel will communicate with the building's main fire panel.		Chemical suppression systems by by UL compliant and meet NFPA standards.
220000.01	Plumbing	SAC/WAC			s The contract documents shall specify that SAC/WAC charges shall be passed through direct to the Owner.		Limit number of units to minimum possible to reduce impact upon environment. See also item # 010000.06.	
220000.02	Plumbing	Plumbing Connections			Soldered or ProPress copper pipe connections are acceptable as appropriate by code.		N/A	
220553.01	Plumbing	Identification tags/signs			Valve tags - Brass 19 gauge or Plastic 1-1/2" with fasteners		Provide ID tags on the grid surface of suspended ceilings with black font on a field of clear dots, with the name of the device (i.e.; "VAV 150"). Locate tag as close to the device as possible.	
220553.02	Plumbing	Identification tags/signs			Valve schedules - 8.5 by 11 laminated copies in holders		Provide in each mechanical room and janitor's closet.	
220553.03	Plumbing	Identification tags/signs			Piping - words and arrows at least 1/2 pipe size , minimum 1/2"			
220553.04	Plumbing	Identification tags/signs			Piping - Underground ID at floor - direct bury tape above all underground utilities.			
220719	Plumbing	Insulation - Piping Exterior			s Full metal aluminum or stainless jackets are required for all exterior insulated piping			
221100	Plumbing	Pipe Cleaning - all water			s Owner 7 day notification is required. Piping systems will be cleaned and flushed in the presence of Owner's maintenance staff.		Owner maintenance staff must confirm that all systems are clean prior to operation.	
221319	Plumbing	Drains - floor			Ensure all floors slope to drains. Recess entire area to be sloped by a minimum of 2" for correct installation of sloped floors to drains.		Eliminate flat floors in wet areas. Provide recesses as necessary in structural deck. Recess finished floor elevations 2" to achieve positive drainage within and to all restroom and mechanical rooms. Areas not installed correctly will be removed and replaced prior to Owner acceptance. Exception - warehouse storage areas will be dead flat except in drive lanes. Drive lanes only will be sloped to trench drains.	
221426	Plumbing	Roof Drains			Provide only interior drains w/secondary overflow scuppers. Overflow scuppers will be one piece and project a minimum of 3" beyond finished wall face. Scuppers will be one piece minimum 1/8" steel with epoxy coating. SWCD - Roof drainage will be managed in a way to reduce irrigation requirements, filter runoff, and minimize storm water impacts. Roof drainage will not be conveyed across parking areas, walkways and the like because the relatively clean water will contribute to the movement of pollutants (sand, salt, oils, etc.).		Drain below grade vs. surface. No primary exterior downspouts. Exception - For small areas such as elevator head house, stairs to roof, clerestory and mechanical penthouses - use only scuppers to drain onto adjacent roofs. SWCD 2008 - for water retention purposes, use new Lakeville Liquor Store water infiltration / irrigation for model. (160th St East of Cedar Avenue.)	
221616	Plumbing	Pipe Soil and Waste			All cleanouts will be easily accessible without moving furniture, equipment, mechanical or structural elements.		Locate logically. Cleanouts must be easy to locate and to clean out with a drain cleaning machine.	

CSI	Section	Item	A	E	S	Standard	Reference	Additional Comments
023000	HVAC	VFD Drives/Harmonics				Special consideration will be given to the location and proximity of all equipment that may produce transient harmonics or be sensitive to it. i.e. computer equipment, broadcasting equipment, transformers, VFDS, UPS, fluorescent lighting, LEDs etc. Fans and Pumps - Electrical Systems and VFD drive protection will be designed to prevent harmonic distortion from VFD Drives. A formal harmonic analysis will be performed if VFD drive loads are expected to be greater than 10% of total building power load.		Attention will also be paid to "reflected harmonics" and the potential for high voltage harmonic distortion is possible when large or multiple Uninterruptible Power Supplies are specified and the building includes an emergency generator. Total electrical system will be designed to accommodate and/or resolve harmonic issues and UPS failure events. New elevator systems will be shielded to prevent RFI affects in the surrounding building and neighborhood.
223116.01	HVAC	Ductwork interior and UG (underground)			s	Allow adequate vertical and horizontal space to accommodate all ventilation and piping requirements in the building space program. No direct buried underground ventilation ductwork unless approved in writing by Owner.		The use of Revit MEP for Mechanical, Electrical and Plumbing will be used to eliminate this problem.
223116.02	Plumbing	Water Softener			s	Use system with brine tank style. All make-up water for mechanical systems will be softened.		Provide secondary overflow containment and positive drainage connection to sanitary sewer for all water softening systems. Provide separate closet area for brine tank separate from mechanical room for bulk salt delivery to eliminate salt dust on mechanical systems. Locate tank closet at exterior wall.
223313	Plumbing	Water heaters restrooms			s	Instant on - point of demand spot heaters - hard wired when approved by Owner. Install recirculating domestic hot water system where applicable at Owner's discretion.		Water heater efficiency standard was increased in 2009 as part of Federal Stimulus grant. Verify current standard at time of design.
223436	Plumbing	Water heaters janitors			s	Provide both instant on and 30 gallon high volume.		Locate this unit in mechanical room near drain.
224200	Plumbing	Plumbing Fixtures - Motion Controlled				All restroom faucets, wash fountains and flushometers shall be individually motion sensor controlled.		Motion sensors shall be hardwired (not battery backup) unless approved otherwise by the County's PM. If possible, wire each motion sensor transformer (individually) to a single access panel location within the room so as to consolidate them for easy maintenance.
224213.01	Plumbing	Plumbing Fixtures			s	Water Closets - Minimum of two per each public restrooms - except in single-use and family restrooms. Water closets will be wall mounted unless directed otherwise by the Owner.		Women's and Men's - No residential water closets. Commercial tank type units may be considered in noise sensitive office space areas. Meet or exceed minimum Federal gallons/flush regulations for water conservation.
224213.02	Plumbing	Plumbing Fixtures			s	Urinals - Specify 1 Pint per flush units. Urinals will be wall mounted unless directed otherwise by the Owner.		When there are 2 or more single-use restrooms in one area, provide a urinal and a toilet in one unit.
224213.03	Plumbing	Plumbing Fixtures				For all gang toilets/urinals - configure back to back and provide door access for clean-out and maintenance of plumbing via large accessible plumbing chase.		Where possible, provide secure access into plumbing chase with 2'-6" to 3' especially for public accessible restrooms.
224216	Plumbing	Plumbing Fixtures				Lavatories - no wall hung - in counter only. Restroom vanity or counter surface will be quartz. Lavatory Counters will be custom structurally designed with structural steel knee supports for each application. Include low-flow (0.5 gpm) faucets.		All restrooms. With owner approval - single units may have wall hung lavatories. For public restroom standard - use detail for the Northern Service Center public restrooms.
224236	Plumbing	Plumbing Fixtures				Laundry sink - provide in each mechanical room		Provide 1 - Sink per "nonboiler" rooms 600 SF or larger.
224243	Plumbing	Plumbing Fixtures			s	Flush and lavatory valves. Public water closets, urinals and sinks will be provided with automatic valves for ADA compliance and public health. Fixtures and valves will be designed, installed and adjusted so they work correctly, will not misfire or get occupant wet. Design valve configuration for ease of maintenance.	Sloan	Provide infrared automatic valves.
224526	Plumbing	Plumbing Fixtures				Provide eye wash/shower stations in boiler rooms and at maintenance areas.		Provide in all Boiler rooms and elsewhere when required by OSHA and Owner (County Risk Management.)

CSI	Section	Item	A	E	S	Standard	Reference	Additional Comments
224713.01	Plumbing	Plumbing Fixtures	A			Water Fountains - Elkay all stainless - no lead. 1 or 2 water fountains as required by local code official's interpretation. County prefers to incorporate bottle filler whenever possible.	Similar to Elkay ezH2O Vandal-Resistant Bottle Filling Station, & Bi-Level Cooler, Non-Filtered Refrigerated Stainless (VRCTL8WSK)	Specific model to be approved by Owner.
224713.02	Plumbing	Plumbing Fixtures	A			Bottle Fillers - Elkay all stainless - no lead.	Similar to Elkay ezH2O In-Wall Stainless Bottle Filling Station (LZWS8)	Specific model to be approved by Owner. Used sparingly and in coordination with large kitchens, normally water fountain / bottle fillers are otherwise used.
230000.01	HVAC	Intake and Exhaust			s	Set at adequate height, orientation and location to eliminate snow blockage. Install plate type or recovery wheel heat recovery units (HRU) on exhausts to recapture embodied cooling and heating energy. Adequately size air handling rooms to achieve installation and maintenance of HRU.		Locate intake upstream - NW of boiler stack or above boiler exhaust. Heat recovery units are mandatory on County facilities. Goal is to maximize capture of embodied heat / cooling to the greatest extent possible and reduce overall facility energy use and expense. For retrofits and new construction provide closed loop glycol heat exchanger.
230000.02	HVAC	Maintenance & Safety				Provide and maintain service space around all equipment. Manufacturer's recommendations will be considered the minimum requirements.		Boilers, pumps, vav boxes, valves, etc. above ceilings and rooftops. Provide space around air handling units and variable air volume boxes to service the equipment and to remove coils. For VAV's in hallways with cable trays - keep cable tray to one side - do not place in center of hallway.
230513	HVAC	Motors - Electric			s	95% or greater efficiency - power factor corrected to 100% Evaluate and specify NEMA Premium motors. Efficiency and ampacity ratings will be shown on the nameplates of all motors that are provided with packaged equipment such as cooling towers, fans etc. This applies to fractional horsepower motors also. Motors controlled by VFDs will be rated as an "inverter duty motor." VFD's will have an integral filter or internal design that reduces reflected wave harmonics into the power distribution system. VFD's will be located within sight of the motor or as close to fan housings and pumps as possible.		Motors 1/2 HP and above are 3 phase high energy efficient. Highest available energy efficient at all HP - 3 year warranty part/labor. Note that average energy used by a motor in one year is 5 times the purchase cost of the motor. Use current version of MotorMaster (4.0 or newer) to determine motor efficiencies for new and replacement units. US Dept. of Energy at http://mm3.energy.wsu.edu/mmplus/mmdownload/register.cfm
230523.01	HVAC	Piping - Hydronic				Valves - locate above ceilings in open office areas.		Provide surface marker signs for all concealed valves.
230523.02	HVAC	Valves				All valves will be ball or butterfly. Specify 3-way control valves at all coils. (Verify use of 3-way valves with Owner)		Ball valves will be full flow for size of pipe served without restriction in size. No globe valves will be permitted unless required by code officials.
230553.01	HVAC	Identification tags/signs				Ventilation signage will be a minimum of 2" wide with arrows to show direction of flow.		Clearly state system - MUA, Return, Supply, Relief, Mixed, etc.
230553.02	HVAC	Identification tags/signs				For Piping - words and arrows will be at least 1/2 pipe size , minimum 1/2"		
230553.03	HVAC	Identification tags/signs				Piping - Underground ID at floor - direct bury tape 12" above UG piping and ductwork if permitted.		
230553.04	HVAC Equip.	Identification tags/signs			s	Engraved Plastic Laminate Signs - Specify recycled content		Provide and identify each major piece of equipment.
230553.05	HVAC	Insulation - Ductwork			s	Exterior insulation only - all joints sealed. All ductwork interior will be smooth cleanable surfaces. No interior duct insulation is allowed.		Exception - transfer units to private offices and conference rooms.
230553.06	HVAC	Identification tags/signs				Valve tags - Brass 19 gauge or plastic 1-1/2" with fasteners		ID valves above ceilings with color dots - blue=domestic water/red=heat
230553.07	HVAC	Identification tags/signs				Valve schedules - 8.5 by 11 laminated copies in holders		Provide in each mechanical room and janitor's closet.
230566	HVAC	Air Purification			s	Ultraviolet Air purification in Air Handling Units to eliminate microbial contaminates.		Consider for pandemic potential.

CSI	Section	Item	A	E	s	Standard	Reference	Additional Comments
230593	HVAC	Testing & Balancing - Air and Water			s	Notify Owner seven days in advance when Contractor is providing testing and balancing. For QA testing and balancing and functional performance testing - Owner will contract directly with and provide the services of an independent testing and balancing firm for all new building construction projects and major interior renovations. Major renovation is defined as any change that significantly modifies the building air and heating water distribution systems.		Owner Maintenance staff to be present during complete process when this service is provided directly by the construction contractor.
230630	HVAC	Fan Schedule Design Considerations			s	All fans will be sized and designed to provide the maximum energy efficiency, stability and service life possible.		Adequate fan installation and maintenance space will be provided at floor level and designed into and around each unit. Calculate annual energy cost to determine maximum energy efficiency and fan sizing by the following method: number of hours/yr. x power (bhp) X 0.746 kW/bhp x dollars/kWh.
230713.01	HVAC	Ductwork - Supply airtightness			s	All ductwork must be airtight prior to any insulation and have a high HVAC Transport Efficiency. Ductwork joints must be airtight and designed to hold the maximum fan pressure without damage or joint separation.	ASTM Standard E779 (ASTM 1999)	Duct thickness and method of joining will be capable of handling no less than 2 inch water gauge (500 Pa) For VAV systems with AHU & VFDs use 4 inch water gauge.
230713.02	HVAC	Insulation - Ductwork			s	Interior only if required - hard cleanable surfaced.		Approved by Owner - case by case. NO compressed coated fiberboards.
230719	HVAC	Insulation - Piping Exterior			s	Full metal jacket all exterior insulated piping		Non - ferrous
230923.01	HVAC	Building Automation Systems	A		s	A computer based building automation system (BAS) will be designed that monitors and automatically controls lighting, heating, ventilating and air conditioning to efficiently operate County office buildings. Systems integration concepts can be used, EXCEPT that fire alarm and security systems will function as "stand-alone" systems with a monitoring only interface to the BAS.	County's Basic Sequence of Operation is provided herein as an Appendix for further designer development.	Facilities Management's Bldg. Services Director is the author of record for the County's BAS - Sequence of Operation.
230923.02	HVAC	Automatic Temp Control Part 1	A		s	Full DDC - fully compatible with existing Owner systems and communications protocols.	County's BAS Project Expectations is provided herein as an Appendix.	The system will provide full color graphics at the site. The Hastings Government Center will also have real time full color graphics via modem communications or if new technology allows or is presently feasible the County's Intranet will access this system with password protection. The decision as to which manufacturers will be installed in the facility will be made by Facility Management staff who will also write the performance specifications for the Architect and not by the mechanical contractor for Division 15 or the construction manager. The low bidder may or may not be awarded the project. This will be accomplished by a break down cost analysis on the bid form with all temperature control bidder submitting total job cost separately from division 15 bidder or the construction manager. Alarms deemed critical by the Owner will be sent to the Hastings Facilities Management dispatcher during normal business hours and to a cell phone and alphanumeric pager after normal business hours. Language shall be clearly decipherable and easily understandable.

CSI	Section	Item	A	E	s	Standard	Reference	Additional Comments
230923.03	HVAC	Automatic Temp Control Part 2			s	Full DDC - fully compatible with existing Owner systems and communications protocols.	Owner will provide system requirements.	Control Devices: EMS system shall control all functions of the air handlers; i.e. mixed air dampers, heating valves, cooling valves, VFD's, static pressure and stop start. Status Indication: Will be accomplished utilizing clamp on current sensors. No flow, immersed paddle or duct mounted switches will be used. Laptop Communications: A laptop computer will be used for off site monitoring and diagnostic analysis. The successful bidder will provide any and all software needed to accomplish this. If memory space is not adequate in the County's existing laptop computers the contractor will provide one new laptop capable of this task. All systems will be fully BACnet compatible.
230923.04	HVAC	Automatic Temp Control Part 3			s	Full DDC - fully compatible with existing Owner systems and communications protocols.	Automated Logic Allerton	Meeting Rooms: will operate independently, heating or cooling by occupant over-ride. Facility Pressure: System will alarm and optional shut down if facility goes into negative pressure. System will have effective means (demonstrated to Owner) to control facility pressure. County Network Compatibility: The BAS (EMS) will be able to operate on the County network, being accessible from any connected P.C.
231313	HVAC	Fuel Systems - Any Hazardous Fluid Handling System Including all Petroleum Products.			s	Fuel oil tank and piping systems for boilers and generators will be installed within the building footprint with full containment liner for all contents of tank. Tanks will be classified as above ground tank with access for inspections. All building piping will be exposed - no underground. For above ground tanks in bunker vapor detection will be provided in room with complete sump monitoring for fill, fill pipe, etc. Install a liquid spill monitor in a depression in the bunker floor. When approved by the Owner, direct buried underground double wall tanks will have tank monitoring probes), complete vapor detection between shells, and sump monitoring sensors. Dispensers - Gilbarco high hose with lighted panels. Provide tank level indicators and auto leak testing function in tank management requirements. This section includes all hydraulic hoisting systems.	2019 NEW: OPW (old were: Eidsen BMT, Gilbarco, Gasboy)	Direct buried tanks may be considered for maintenance shops providing they are double wall ACT-100 (UL 58 and Sti-P3 - 30 year warranty) fiberglass coated with interstitial and external leak detection with limited underground pipe runs and well sloped fill areas to keep water out of the systems. Current manufacturer for leak detection systems is OPW. Fuel management system will be OPW fully compatible and connected to existing Owner system. Minimum standard for direct buried fuel or any petroleum product piping is 2" Environ Geoflex piping system with primary/secondary containment pipe and a 4" corrugated underground rated plastic containment/protection pipe sealed watertight below grade and opened so any discharge will go into the sumps. Mount sump containment tanks e.g. Environ MBS3642 on top of UG tanks. Use fuel resistant concrete for all slabs and structures for fueling islands. Installing tank contractor will immediately complete MPCA registration forms and transmit to Owner.
232123	HVAC	Pumps				All pumps will be direct drive - dual system - redundant	Bell & Gossett	
232213	HVAC	Boilers			s	Provide isolation valves all equipment piping connections		
232516	HVAC	Water Filters			s	Provide high efficiency sand filters on condenser water return from cooling towers, heating hot water loops and chilled water loops. Owner will specify whether to use sand or other filters.	Process Efficiency Products Inc., 322 Rolling Hills Rd., Mooresville, NC 28117-9920	Reduce fouling materials acquired from the atmosphere and corrosive nature of systems on piping and components. Extends life of coils, pumps and tubes.
233000.01	HVAC	Licensing Requirements				Effective 7/1/2003 anyone who installs gas piping, heating, ventilation, cooling, air conditioning, fuel burning or refrigeration equipment must post a \$25,000 bond with the Department of Administration, Building Codes and Standards Division. Require proof of the bond from all HVAC installers on project. See also Standard Assurances for Construction Contracts - contractors have to certify compliance. New statute is Minn. Stat. Sec. 326.992		

CSI	Section	Item	A	E	S	Standard	Reference	Additional Comments
233000.02	HVAC	Rooftop Equipment Anchor Requirements.				All equipment and anchoring systems (knee walls, blocking, curbs, etc.) will be designed to withstand all lateral and wind-uplift loads during a 120 mph sustained wind event. A minimum safety factor of 3 is required for all County buildings. Effort will be made to move all HVAC equipment intake and exhausts to vertical surfaces. All exterior mounted equipment including stands, supports, anchors and fasteners will be nonferrous, stainless steel or steel with a minimum G-90 hot-dip galvanized coating. Lightning protection systems will be mechanically fastened to vertical sections of parapets with #12 stainless or system compatible screws that have a minimum 1-1/4" embedment. Use only looped connectors. Pronged connectors will not be used. For direct installation on a built-up roof - fasten connectors with asphalt roof cement. Use a liquid sealer compatible with the membrane for single-ply roofs.		Determine wind loads using American Society of Civil Engineers (ASCE) 7-05 for minimum rooftop equipment design requirements. All design efforts should be made to eliminate roof top equipment and penetrations. <u>A mechanical penthouse will be constructed to shield vital equipment.</u> There will be no exposed ductwork on any roof. Equipment spring vibration isolators and all anchors will accommodate <u>uplift resistance</u> in addition to lateral resistance. All equipment supports, sleepers, and curbs will be anchored directly to the structure. All fans and condensers will be structurally anchored to the curb (for fans at least two stainless steel screws each side.) All doors on rooftop equipment will be hinged and not removable. Cowlings less than 4' feet in diameter will be attached to the curb with 1/8" diameter stainless steel cables. Larger than 4' will use 3/16" stainless steel cables.
233233	HVAC	Ductwork Return				s Use ducted returns for all mains.		Reduce potential for stirring up materials in open ceiling plenums used for air return. Explore use of return air ductwork or wall cavity for air return grilles at floor level to circulate heat to floor and prevent "short-circuiting" of supply air to ceiling returns.
233313	HVAC	Dampers - Fire	A			Install with actuators outside ductwork. Provide adequate access to service damper and actuator while maintaining fire rating of wall assembly. All fire dampers will be motorized and fully addressable so they can be tested.		At dampers provide access hatches with plexiglass viewing ports for viewing damper without opening ductwork.
233616	HVAC	Air terminal units				As directed by Owner.		This includes constant volume single duct terminal units, variable volume single duct terminal units, variable volume single duct fan-powered terminal units and dual duct terminal units, ceiling induction terminal units (with Owner permission only), series fan powered variable air volume terminals, reheat units, unit ventilators and energy recovery devices.
233616.01	HVAC	VAV Actuators				s Direct couple control motors to damper shaft.		No linkage rods.
233616.02	HVAC	VAV Controllers				Factory stamped position arrow on damper shaft protrusion		Must show true position. Field markings, etc. will not be accepted
233616.03	HVAC	VAV Reheats				s Provide removable access covers for cleaning.		Install in obstruction free areas for maintenance access.
234100.01	HVAC	Air Filters				s Spares - replace all filters prior to Owner occupancy. Three sets are supplied by Contractor - 1 for start-up, replacement set at occupancy and one complete spare set.	Owner's FM to provide name of Manufacturer	Provide one complete set of replacement filters for all filter banks.
234100.02	HVAC	Air Filters				s Gauges - provide manometer type 0-3" wg		
234133	HVAC	Air Filters				s 2" prefilter - high efficiency 4" primary	AAF - Amer-frame	Disposable S media MERV 15 or Higher. Fabricate frames from not lighter than 1.6 mm / 16 gauge sheet metal with rust proof coating. Each air filter will be equipped with a suitable filter holding device. All frame seats will be gasketed and all joints between filters, housings and walls will be airtight.
235216.01	HVAC	Boilers - Condensing				s Multi staged units as required - generally two to three units staged, modulating and condensing boilers to handle complete load. Design system to return low temperature water to boilers.	Condensing - Aerco	Provide redundancy w/ one spare unit to guarantee load. Boilers for large buildings will be dual fuel. Rated efficiency of lead or main winter boilers will exceed 80% and high efficiency shoulder season boilers will exceed 92% rated efficiency. Minimize size of high energy efficiency condensing boilers will be 60 hp unless approved in writing by the Owner.
235216.02	HVAC	Boilers				s Control only through Energy Management System		Boilers must also be able to run manually and independent of building automation system.
235300	HVAC	Expansion Tanks				No bladder types. All tanks with viewable site glass from floor.		
235500	HVAC	Direct Fired Units				If permitted by Owner - provide standard outdoor air intake required by manufacturer.		Use only with Owner approval.

CSI	Section	Item	A	E	S	Standard	Reference	Additional Comments
236400.01	HVAC	CFC - Refrigerants			s	For all refrigerant systems - use HFC-134a	Dupont SUVA 134a	Use of CFC's are banned. HCFC's are to be phased out. Do not specify any refrigerant that is scheduled at the time of bid to be banned.
236400.02	HVAC	Chillers			s	Two or three individual units, one or two to handle full load. Design load will be calculated to include R38 non average roof insulation and R20 walls.	Trane	Specify highest quality energy efficient/environmentally safe systems. Provide for light and staged loads with 100% system redundancy.
236400.03	HVAC	Chillers Redundancy			s	All pumps, towers and equipment to be redundant.		
236400.04	HVAC	Chillers			s	Provide isolation valves all piping to equipment		
236400.05	HVAC	Chillers			s	Pumps - condenser - install lower than tower or dry coolers. Wet cooling towers will be located a minimum of 50 feet from any air intake or occupied staff area. Cooling tower drives will be adjustable speed to maximize energy efficiency.		All pumps designed for self priming - non-cavitating. Where site permits - locate wet towers 100 feet from building.
236400.06	HVAC	Chillers + Data Equip			s	Provide 24 hour - 7 day per week spot-cooling for data closets and special use rooms. Systems are smaller and run cooler. Cooling requirements will be evaluated on a case by case basis.	Owner (IT staff) will provide requirements.	Provide free-cooling option for winter operation where needed. Typically only for large data center.
236500	HVAC	Cooling Towers				Cooling Towers shall be preferred in an all-stainless steel construction. Additionally, it shall be specified that the Contractor provides a written "passivation plan" with water treatment to mitigate corrosion of any galvanized components within the system.		The Contractor shall be made responsible by the specifications for implementing the passivation plan for the first cooling season of operation. Additionally, the Mechanical Engineer, the Owner and the Contractor shall meet with the Contractor's "first season" water treatment contractor at start up of the unit to confirm the "passivation plan" to be followed.
237200	HVAC	Energy Recovery Equipment			s	The Design Team shall review the potential use of Energy Recovery Equipment with the County at Schematic Design. Wherever feasible, Energy Recovery Equipment shall be used.		There are 5 types of HRU units - Heat-Wheel Air to Air, Heat-Pipe Air to Air, Fixed-Plate Air to Air, Packaged Air to Air and closed loop glycol system. Selection of the type is building specific.
237323	HVAC	Custom Indoor Central-Station Air Handling Units			s	Provide functioning freeze stat operation. Fully insulated. Provide full size door for full face access to fan, cool/heating coils, filters and air mixing chamber.		Provide air blenders - longer runs - etc. Designer will review the number, location and layout of all sensors with the Owner during design.
238236 238316	HVAC	Piping - Hydronic - Perimeter Radiant Heating - Fin Tube			E s	Perimeter radiation at all exterior walls with or without windows. At windows install as part of window opening sill area.		Install where heat loss potential is the greatest along building perimeters. "The perimeter heating loop temperature will be controlled up to 180°F by outdoor exterior temperature boiler/hot water reset. Eliminate false temperature sensor readings. The sensor for the reset function must be in a location that accurately reads the ambient outdoor temperature and is unaffected by the building or operations about the building. The boiler reset function will be programmed to achieve the maximum energy efficiency of operation. Perimeter heating will be thermostatically controlled by a local room thermostat in the same room and within 10 feet of the perimeter heating units. The perimeter heating zone valves will open 1st upon call for heat. If heating needs are not met by the perimeter heating and supply temperature reset, then the room VAV (reheat coil if present) will open to supplement the perimeter heating to achieve the set point of the thermostat. Fully coordinate control of the perimeter heating zones with the VAV and boiler reset temperature controls and functions to prevent hunting and competition issues. To avoid isolated potential for freezing, the perimeter heating hot water return loop temperature will not be used to control the perimeter main hot water loop temperature. This would satisfy the temperature in the supply loops, but may not provide adequate heat at each zone. For new installations – the percentage of fins per length of pipe for each location will be reviewed with the Owner."
238413	HVAC	Humidifiers			s	No humidification systems to be provided in new building construction. Abandoned systems will be removed when mechanical systems are upgraded, replaced or modified.	Dri-Steem	Exceptions: Humidification will be maintained at the Robert Trail Library for the wood ceilings and the Historical Museum.

CSI	Section	Item	A	E	s	Standard	Reference	Additional Comments
260000	Electrical	Clocks				Battery operated only. For multiple clock installations at one building - install clocks that automatically adjust to true time (i.e. atomic) .		No master clock systems.
260000.01	Electrical	Closets Electrical				Electrical distribution panels will be housed in separate secure rooms. Data Closets are not to be combined with electrical closets- see separate section for Data Closets.		Reviewed by Facilities Management / base upon size-complexity or square footage. Electrical closets will be dedicated space not shared with other systems such as telecom or data. For multiple story buildings, electrical closets will be stacked. The locations of vertical backbone pathways, horizontal pathways, closets, equipment rooms and utility entrance facilities for electrical and communications distribution equipment will be established before the architectural concept and is finalized. The spacing and number of closets will be based upon distribution need and good electrical engineering in limiting excessive runs of conduit and conductors. Electrical Engineer will demonstrate how the greatest economy in copper cabling can be achieved.
260000.02	Electrical Energy Mgmt.	Load Shedding			s	Provide capabilities on all projects - non-essential loads		Remote activation and monitoring including on-site demand meter.
260500.01	Electrical	Receptacles - 120 v				Grey receptacles with stainless steel covers.		All receptacles will be UL rated and manufactured from a trusted source.
260500.02	Electrical	Switch wall				20 A, commercial-grade, quick make, quick break w/toggle handle totally encl.	Hubbell, Leviton, P & S	Same construction for 3-way and 4-way switches w/stainless covers
260513.01	Electrical	Wire - 600 V			s	All copper - increase all design ampacity by 20% above code		#10 AWG and larger - stranded; #10 AWG and smaller = solid copper
260513.02	Electrical	Wire - Pulling				All wiring must be pulled into the conduit at the same time		All trades and contractors to coordinate work to eliminate damage
260513.03	Electrical	Wire - Splicing				Conductors may be spliced only in ACCESSIBLE junction boxes		
260513.04	Electrical	Wire Testing				Post install - Megger test all feeders for continuity and insulation Q/A		
260513.05	Electrical	Wire - Power & Lighting				Min. wire size = #12 AWG. Use rigid conduit. MC cable is not allowed.		
260513.06	Electrical	Wire - Neutral				Neutral wire to be one wire size larger than lead wires		A second neutral is required for all K type Transformers by Code.
260513.07	Electrical	Wire - Std Circuits				20 A @ 120V and 20 A @ 277 #10 AWG Runs longer than 50'		All others ampacity code +20% - plus voltage drop calculation for run length
260519	Electrical	Wire - Control				Min. wire size = #14 AWG. Use rigid conduit. MC cable is not allowed.		
260526	Electrical	Grounding System				Provide "Custom-designed" grounding system to be specified by Electrical Engineer - Approved by Owner. Include detailed pre-occupancy continuity testing of the complete grounding system. Grounding system will include lightning protection, roof mounted equipment, and bonding to any grounding grids within 180' of new construction.		Primary and secondary - special attention to lightning attenuation to protect sensitive equipment including telecom. data. etc. Provide a custom-designed internal and external grounding system by specific building location and surrounding built environment and topography.
260533.01	Electrical	Boxes - Junction				Locate above accessible ceiling in finished areas only including pull boxes.		Support boxes from structure - not by conduit.
260533.02	Electrical	Conduit				Use only metallic including embeds unless approved in writing by Owner.		Conduit for placement in slab will be approved by Owner and can be other than metallic.
260533.03	Electrical	Conduit				Liquid tight flexible for outdoor, damp, corrosive, HVAC interior or internal Drive		Final 3 foot connection to all sprinkler system valves.
260533.04	Electrical	Junction boxes			s	Locate above partition height in modular office areas.		Also Tstats, fire alarms, etc.
260539.01	Electrical	Duct - underfloor			s	Run trunks on 20' centers - locate knockouts on floor plan. Use only for slab on grade or in areas where underfloor area is inaccessible.		Owner to provide "standard" ergonomic partitioned layout plan. Fully coordinate with furniture layout plans.
260539.02	Electrical	Duct - underfloor			s	Provide markers in concrete or on raised floor 36" OC and at ends		
260543	Electrical	Duct - infloor boxes			s	Provide markers in concrete or on raised floor 36" OC and at ends	Wiremold Co. West Hartford CT	For infloor junction boxes - use Walker Infloor Systems RFB8 High Capacity Recessed Floor Box. Cover plates for telecom and data will be provided by the General Contractor.
260553.01	Electrical	Enclosures				NEMA standard - all locking for security		Address preventing unauthorized access

CSI	Section	Item	A	E	s	Standard	Reference	Additional Comments
260553.02	Electrical	Identification tags/signs				Sign all control switches and panels		Provide identification tags with black font on a field of clear, with the name of the panelboard and circuit # on every receptacle cover plate.
260553.03	Electrical	Signage			s	All electrical components ID with engraved red/white		Use plastic laminate with recycled content.
260900	Electrical	Lighting Control System			s	In general, all lighting control systems will be fully compatible and controllable by and through the building automation system (BAS) and be fully BACnet Compatible and must be provided by the project.	GE, Lutron or approved Equal: Firms regularly engaged in manufacturer of lighting control and ancillary equip., of types and capacities required.	Products must have been in satisfactory use in similar service for not less than 5 years. Component pretesting; All components and assemblies will be factory pretested and burned-in prior to installation. System Support: Factory applications engineers will be available for telephone support.
260923.01	Electrical	Lights - controls			s	Provide manual override for all controlled devices or circuits. See also standard "DESIGN.14" above for additional information.		Manual over-ride of controlled lighting systems (occupancy or photo-sensor) will be keyed or located remote from occupant or public access.
260923.02	Electrical	Lights - exterior			s	Provide both photo cell and time clock control as minimum. Make use of 2 stage motion sensing egress to control parking lighting. Higher level for 10 minutes then returns to reduced level. Specify LED directional lighting when available to provide highest energy efficiency possible and to eliminate insect attraction.		Federal Lighting Standard limits the maximum wattage and amount of light that bleeds onto adjacent properties. All parking lots will be lit so that only the parking areas receive illumination. Prior to implementation address any lighting level increases with surrounding neighbors for both urban and rural settings. DCC is example of 2 stage exterior employee parking lot lighting.
260923.03	Electrical	Lights - occupant sensor - general			s	Ceiling mounted motion sensors in all private, open offices, public areas, toilets, etc. 2012 - Watt Stopper DT-305	Watt Stopper	Also store rooms - no wall sensors - all ceiling mount - dual tech. Include contractor requirement to field adjust all occupancy sensors after 3 months of owner occupancy.
260923.04	Electrical	Lights - occupant sensor - meeting rooms			s	Provide occupancy sensors in all meeting rooms - provide manual over-ride - standard switch to turn lighting off during presentations. Watt Stopper DT-305 Ceiling mount only.	Watt Stopper	
260923.05	Electrical	Lights - on/off control			s	Exterior and interior lighting will be controlled for on/off and unoccupied shutdown sweeps through the building EMS/BAS.		Fully programmable through the EMS
260923.06	Electrical	Lights - switches			s	Locate manual switches above wall panels or outside systems furniture installation areas for modular office areas. If occupancy sensors cannot be used in any space, then ADA height requirements will be used in accessible areas.		Or in areas that panels will never be installed. Maintain ADA requirements. Coordinate light switches, fire pulls, extinguishers, thermostats with partitions to prevent interference or covering them up.
260923.07	Electrical	Lights - timed switches			s	Install in all boiler, electrical and mechanical rooms.		Dial control - maximum on time of 1 hour. Provide one at each entry door into room.
262200	Electrical	Transformer			s	High Energy Efficient - specify only K-type or equal. (note that a 2nd neutral conductor is required for all K - type transformers.)	GE, ABB, Square D	Low temp and high power factor. High-efficiency transformers are those meeting NEMA standard TP 1-1996, which have a 98% operating efficiency. All units must be Energy Star Approved.
262413.01	Electrical	Switch Disconnect			s	Non-fusible quick make/break w/lockable "OFF"	GE/Westinghouse/SqD	Comply with UL Ratings, NFPS and Electrical Codes
262413.02	Electrical	Switch MCC/Board			s	Solid copper bus bars only	GE	
262416.01	Electrical	Panel Boards			s	Circuit Breakers only. Eliminate fuses to greatest extent possible.	General Electric	Provide minimum of 25% spare breakers in each panel.
262416.02	Electrical	Panels				Provide separate rooms for all electrical - no cupboards		
262419.01	Electrical	MCCs				Provide H-O-A switches - all panels		
262419.02	Electrical	MCCs Starters				To be specified by Electrical Engineer - Approved by Owner		Locate starters in MCC panels.
262419.03	Electrical	MCCs Contactor				To be specified by Electrical Engineer - Approved by Owner		
262713	Electrical	Meter - Owner			s	Owner monitoring meter for buildings larger than 50,000 square feet. Provide sub metering of HVAC systems and lighting systems to measure building energy efficiency.	GE/Westinghouse/Cutler H.	Watt-hour Meter with programmable demand indicator & pulse initiator. In each building, separate submeters will be provided for 1) lighting, 2) cooling equipment, 3) balance of building mechanical system, and 4) 120v occupant distribution systems.
262800	Electrical	Ground fault receptacles				All restrooms, sinks, convenience stations, kitchenettes or any receptacle within 24" of a water source.		Will be resettable locally, not panelboard mounted.
262813	Electrical	Fuses			s	All over current protection will be circuit breaker - no fuses		

CSI	Section	Item	A	E	S	Standard	Reference	Additional Comments
263100	Electrical	Photo Voltaics (PV)			s	Solar Panels: Examined on a case by case basis.		There are a number of issues to consider for using PV panels on buildings. If the modules are interdependent of each other. If one panel fails - are they all off line. Panels are high maintenance. They will not generate power if they are dirty or covered with snow. Batteries system is needed if the power is to be stored for light load applications.
263213	Electrical	Emergency Generator			s	Buildings 30,000 sq. feet and larger will have full emergency power. Buildings less than 30,000 sf will be handled on a case by case basis to determine when emergency generators will be provided. Provide submeter for fuel on all gensets. Smaller buildings may receive generators only upon written direction by the Owner.	Cummins Engine Co., Caterpillar Inc., Katolight Corp.	Electricity deregulation - continuous service - emergency shelters. Configure exhaust to eliminate noise from occupied parts of the building and potential for smoke to enter fresh air intakes. Carefully evaluate available technology to achieve the highest fuel efficiency and lowest emissions. Assist the Owner with filing for the State permit(s).
263223	Electrical	Wind Energy Equipment	E		s	Will be considered only upon specific direction from Owner.		Dakota County is not located in optimal wind zone. Turbine at the Visitor's Center was removed after vendor bankruptcy.
263313	Electrical	Batteries			s	Sealed - 5 to 6 year warranty - straight line prorate after 1st year (UPS)		RE: NEC, UL, ANSI and NEMA standards for material ratings
263353	Electrical	Uninterruptible Power				Critical areas, lighting, LAN data and telecommunications closets, court and hearing room lighting only, all safety, fire and security systems. Per DC IT's direction, whenever possible, the UPS unit should be separate and not combined with the function of any Power Distribution Units (PDU's).	EPE, Liebert Solid State	One (1) hour load carry time if generator backup present. Electronics must be located above batteries and capacitors within system housing. Capacitors cannot be located above any control systems.
263500	Electrical	Harmonic Distortion				Design considerations for Harmonics relating to UPS, VFD and Emergency Gensets. Must be consistent with current best practices.		
263513	Electrical	Capacitors			s	Power Factor Correction to > 95% Target is 100%		Install at service entrance equipment.
263513	Electrical	Current Transformer CTs			s	Size and type required for feeder monitoring.		As needed in switchgear.
263623	Electrical	Switchgear - Paralleling				Paralleling switch gear will be provided so that all generators can be used for peak shaving during normal operations.		SPECIAL WARRANTY - Contractor will provide 5 year full parts and labor warranty for the switchgear and all required accessories.
264113	Electrical	Lightning Protection			s	All Buildings will be equipped with 100% lightning protection. System will comply with UL96 and NFPA 426. Installation will be UL certified.	Thompson Lightning Prot.	Verify that the system materials (copper or aluminum) are compatible with roof flashing/parapet coping materials and finishes. This applies to all materials that will come in contact with the lightning protection system. No dissimilar materials. See Section 07500 for additional wind load and anchoring requirements.
264123	Electrical	Lightning Suppression				Surge arrestors and suppressors.		Any building within 180 feet of an adjacent taller structure will be so equipped.
264300	Electrical	Transient Voltage Protect			s	Provide transient voltage protection and surge suppression on main building service. For existing building renovations provide surge suppression equipment on all 120 volt feeders lines if not integral with transformer or main feeder.		Eliminate need for individual suppression at sensitive equipment and work stations.
265000.01	Electrical	Lights - custom			s	No custom manufactured light fixtures are permitted		No special cost allowances for lighting fixtures will be included in the bid document. If approved by the Owner in writing, the fixtures may be bid separately or provided by the Owner. Unit pricing will generally be used for any specialty item.
265000.02	Electrical	Lights - lamps	E		s	Minimize use of lamp types and sizes to 3 throughout building. During DESIGN DEVELOPMENT a complete schedule of the number and types of lamps will be provided to the Owner for approval. Employ using LED lighting for all lighting applications, where applicable. LED drivers are to be 100% solid state.		Includes cove lighting, task lighting and lighting in systems furniture. All lamps subject to Owner review and approval.
265100.01	Electrical	Lights - level office areas	E		s	FC @ work surface - provide 30-50 FC Supplemented with energy efficient task lighting when necessary.		Use of indirect in ceiling reduces glare.
265100.02	Electrical	Lights - interior (new)	E		s	All new systems to be LED. Color temperature to be 3500 K. All fixtures within a room to be the same color temperature. Any variation to this standard must be approved by the CPM Project Manager.		See lighting control standards for further discussion.

CSI	Section	Item	A	E	S	Standard	Reference	Additional Comments
265100.03	Electrical	Lights - interior (matching existing)		E	s	Legacy fluorescent systems to be as follows... In the absence of specific direction, fixtures with 2 - 25 watt T8 lamps with 4 lamp ballasts will be used. One ballast per 2 fixtures, rigid conduit with 5' whips. The standard is T-5 3500 K - for 4' lamps. Compact fluorescents for spots up to maximum of 42 watts - UL listed w/ballasts Class P with THD less than 15% operating lamps at 20KHZ or higher w/PF above 90%. For indirect linear lighting - use only 4' lamps evenly spaced or design length to even fixture length - 2' and 3' lamps are not permitted.	Phillips, GE, Sylvania	All lighting is Owner line item approval and all must be recyclable. The goal for lighting efficiency is maximum 1.0 watt per square foot including ceiling and workstation task lighting. The current fluorescent lamp color temperature standard is 3500K. Provide indirect surface mount fixtures in ceiling. For large renovations, verify the color temperature to match existing.
265100.04	Electrical	Lights - Daylighting		E	s	Provide as much natural light as possible through the interior occupied spaces. Use creative integration of daylight and energy efficient lighting options and effective control strategies to provide for the greatest visual comfort for employee productivity while maintaining the minimum wall insulation R-value.		Use effective design measures and modeling to draw natural daylighting as deep as possible into the interior space of each floor. Maximize number and location of windows to provide quality and visually stimulating environment. Orient building to reflect daylighting strategy. i.e. light shelves, side and transom lites, tube lighting, etc.
265100.05	Electrical	Lights - UL rating			s	Each complete lighting fixture must be UL approved.		Individual component UL rating or approval is not acceptable for entire fixture. Entire fixture must be approved - UL rated and UL labeled.
265113.01	Electrical	Lights - ballasts remote			s	For inaccessible or high bay fixtures - locate ballasts remote in separate room unless catwalk or other access provided in high bay areas. Provide adequate ventilation to maximize ballast life.		Consider upgrade to LED long life technology for all high bay applications.
265113.02	Electrical	Lights - luminaires			s	Owner to approve all fixture types and models prior to bidding.		Energy efficient - occupant friendly.
265113.03	Electrical	Lights - reflectors			s	High specular -maximize lighting - minimize number of lamps		See other comments concerning indirect and task lighting in work areas. Indirect lighting and high luminescent ceiling panels will be used to the greatest extent possible.
265200	Electrical	Lights - emergency			s	Integral with fluorescent fixtures - battery w/o generator		Battery operated w/generator backup in high security areas such as holding cells and court rooms.
265300	Electrical	Lights - exit signs			s	Use 2.5 watt light emitting cathode as available in lieu of high resolution Red or Green LED - high energy efficient - meet UL 924 with maximum power consumption of 9.5 watts per double face sign. Unit to be self powered with solid-state voltage limited charger.	Cooper Lighting/Sure-Lites	Sign Warranty 1 year. Battery warranty - 15 year pro-rated. LED lamp with estimated life of 25 years. Housing to be Die Cast aluminum with hinged face plate. Face - no dot effect in lettering. Voltage to be 277 VAC, 60 Hz or dual voltage 120/277 if only 120 is available.
265600.01	Electrical	Lights - exterior			s	All exterior lighting will be LED with the distribution type focused on illuminating only target County property areas. Exterior LED lights should have a 10 year warranty on the LED and finish of the fixture.	Kim, Sterner, Philips	480 volt power. Check status of Federal Law and corresponding MN Statute concerning exterior lighting.
265600.02	Electrical	Lights - Lighting Level Parking Lots				5 foot candle @ lot surfaces or less as may be required by code or Statute. Lighting levels will be reduced and carefully directed when near adjacent residential areas		Safety, security, productivity issue. 2008 Code is 1 FC average.
265600.03	Electrical	Lights - parking lot				Locate along perimeter - eliminate exposure to car, trucks & plow	Parking Lot = Philips LUMEC RVM @ 4,000K correlated color temperature	Install directional lighting or specify cut-off shields to control light spill
265636	Electrical	Lights - flagpole			s	Provide at 2-3 feet off the ground to allow for snow cover. Preferred lighting location is from adjacent building or structure.	Flood/Flagpole = Philips GARDCO DFC/L-7 @ 4,000K correlated color temperature	
270000.01	Telecom	Comms. Cabling			s	CAT 6 cable to desktops, CAT 6A to wireless access points. Owner IT department will complete cabling on some smaller projects, but commonly the project handles hiring a contractor for completion of communications cabling.		Design Team to have at least one dedicated meeting per design phase with County IT to review/approve all Division 27 design.
270000.02	Telecom	Fiber Optics			s	Fiber Optic from MPOP (MDF Room) to Closets (IDF Rooms).		

CSI	Section	Item	A	E	S	Standard	Reference	Additional Comments
270000.03	Telecom	Comms. Cabling & Fiber Labeling				Confirm labeling is inline with the current IT standard. Current standard is "closet label, three digit cable number". Examples: K015, A101, D250. If closet covers more than one floor then (floor number, closet label, three digit cable number) Examples: 1N015, 3J101, 2G250. All cables must be labeled at both ends.		
270000.03	Telecom	Paging - Emergency Communications				Provide paging system when directed by Owner. When Sound masking system is present, it will be provided as part of the paging speaker system for all open office areas to reduce and eliminate sound carry-over cubicle to cubicle. Paging and sound masking requirements will be evaluated on a case by case basis.		Libraries require paging especially in public areas.
270000.04	Electrical	Sound Masking				Sound Masking will be specified for all large open office settings. Paging, when required, will be integral with the sound masking sound masking system. Requirements will be evaluated and approved by the Owner on a case by case basis		Provide local control of soundmasking for Courts areas and large meeting rooms. Paging will be zoned as a minimum by floors, then departments then section. Audio systems in courtrooms and large meeting rooms will be independent of other systems.
270000.05	Telecom/Data	Cable Trays			s	Cable tray locations will be developed by the project electrical engineer and approved by Owner. Cable trays will be placed on each floor back to IDF or MDF closets for station and riser cables. Minimum width of cable trays is 12 inches wide. Minimum width for main distribution cable trays is 18 inches wide.		Backbone raceways will be installed to eliminate the need for independent suspension of Telecom and control wiring through plenum ceilings. Electrical Code requires that all wiring in plenum ceiling must be separately supported. Wiring cannot lie on ceiling grid.
270000.06	Telecom/Data	Electrical				All DATA cabling will be blue. Provide at least two 20A double duplex dedicated, isolated ground outlet IDF (Intermediate Distribution Frame) closet. Provide at least four 20A double duplex, dedicated, isolated ground outlets and four standard 20A double duplex outlets in each MDF (Main Distribution Frame) closets. These outlets must be on separate 20 amp circuits. Each closet requires a grounding bus back to main electrical panel or directly to building grounding system. Each closet wired back to a central UPS system.	Copper Data Cabling: GenSpeed6000	Confirm specific needs for each situation with Owner
270000.07	Telecom/Data	Lighting				Lighting in the closets to be a minimum of .50 foot candles (540 lux at 3 feet (1 foot) from the floor. Bright lighting in closets is needed for technicians to easily distinguish color coded pairs and tiny fiber optic strands from one another.		
270000.08	Telecom/Data	Temperature Control				All closets will be designed to maintain temperatures between the range of 64 degrees and 75 degrees Fahrenheit 24 hours 7 days per week.		All special cooling equipment will be fully equipped to provide free cooling when exterior ambient temperatures are available to do so. Requirement continue to change. Verify needs with Owner for each project.
270000.09	Telecom	Humidity Control				All closets will be designed to maintain humidity ranges of 30% to 50% humidity 24 hours 7 days per week.		Requirement continue to change. Verify needs with Owner for each project.
270000.10	Telecom Rm	Doors				Doors into Telecommunications Closets will be a minimum of 36 inches wide and 80 inches tall. Doors will open out for 180 degree radius to allow for maximum use of available floor space or additional door swing space will be provided inside the room.		Doors and room heights will be sized to accommodate all special equipment for these rooms.

CSI	Section	Item	A	E	S	Standard	Reference	Additional Comments
270000.11	Telecom Rm	Ceilings				Provide no suspended or drop ceilings. Minimum clear ceiling height is 8 feet 6 inches. Communications racks are usually a minimum of 7 feet tall. Provide adequate space above 7 feet for cable trays and cable management.		Meet or exceed local codes, ordinances and requirements including fire protection. Cabinets are only used at County Data Centers and all other locations are 2-post racks.
270000.12	Telecom	Closets LAN-WAN Equip				Owner provides standard design to Architect. See separate comments regarding types and sizes of closets.		For new data closets, provide adequate number of conduit runs for future cabling and space sufficient to access data equipment racks from all sides. For multiple level buildings, data and telecom closets will be stacked.
270000.13	Telecom/Data	Telecommunications Room Specifications				The size of the telecommunications closets should be determined by the area they serve.		Main Communications closet (MDF) 20' x 20' Intermediate closets (IDF) 5000 square feet or less 10' x 7' Intermediate closets (IDF) 5000 to 8000 square feet 10' x 9' Intermediate closets (IDF) 8000 to 10,000 square feet 10' x 11' Intermediate closets (IDF) 10,000 square feet and above 11' x 12'
270000.14	Telecom/Data	Closet Locations				Closet locations are determined by centrally locating within the building floor plate. The rule of thumb is to begin from any extremity and move in about 200 feet and place closet in a nearby location. Using that point as a center reference for a radius, draw a circle and ensure all locations are less than 200 feet. Maximum cable length for any run is 280 feet.		Telecommunications rooms should be exclusively for telecommunications. No electrical or other equipment will be designed for or placed into these rooms.
270000.15	Telecom/Data	Backboards				Each closet will have ¾" electrical grade plywood backboards on one wall as directed by the Owner, painted with fire retardant paint on both sides.		This will be handled case by case. VOIP is impacting the requirement for this item.
270000.16	Telecom/Data	Patch Panels				CP48BLY – Panduit 48 port patch panel for rack.		CJ688TGOR –Panduit orange jacks for patch panel jacks.
270000.17	Telecom/Data	Patch Cables				FLEXboot Series cat6 24AWG patch cable	Monoprice.com	
270000.18	Telecom/Data	Data Jacks				CFP2SY – Panduit 2 port stainless steel faceplate. CFP4SY - Panduit 4 port stainless steel faceplate. CMBIW - Mini-com Blank Inserts for faceplates. CBXJ2IW - Panduit MINI-COM surface mount box.		
270000.19	Telecom/Data	Data Racks				•Tripp Lite 45U 2-Post Open Frame Rack Threaded Holes 800lb Capacity. Mfg. Part: SR2POST •Tripp Lite Rack Enclosure 6' Vertical Cable Manager Double Finger Duct . Mfg. Part: SRCABLEDUCTVRT		
270000.20	Telecom/Data	Data Racks - Horizontal Cable Management				•Tripp Lite Rack Enclosure Cabinet Horizontal Cable Manager Finger Duct with dual-hinge cover. Mfg. Part: SRCABLEDUCT2UHD		
270000.21	Telecom/Data	Data Racks - Placement				The data rack should be at least 3 feet from the wall to allow access to equipment. Ladder racking should be used from the wall to rack.		
280000.01	Electronic Safety & Security	Duress System				Duress system will be provided for Courts and other areas as determined from Safety and Security planning. New systems will match and be extensions to existing systems.		Owner will provide direction during design development.
						Duress Systems to be Innovonics based and tied to Intrusion System and Card Access system (if present)		All duress buttons to be wireless
						Duress Receiver - Innovonics ISW-D8125CW-V2	Innovonics	
						Duress Repeater - Innovonics EN5040-T	Innovonics	
						Duress Button - Innovonics EN1233S	Innovonics	

CSI	Section	Item	A	E	s	Standard	Reference	Additional Comments	
280000.02	Electronic Safety & Security	Intrusion Detection System				Control Panel - Bosch B9512G		Owner will provide direction during design development. Typically panels are to be reused in renovations. Panels to include battery back-up and be connected to Emergency Generator where present.	
						Keypad - Bosch D1260W			
						Motion Detector - Ceiling - Bosch DS9370			
						Motion Detector - Wall - Bosch ISC-CDL1-W15G			
						Door Position Sensor - Recessed - GRI 180-12		When door has a card reader, Door Position Sensors to tie to Access Control controller. Access control will then send a dry contact for door status to the intrusion.	
						Door Position Sensor - Surface - GRI 4400-A			
						Door Position Sensor - Garage Door - GRI 4700-A			
						Glass Breaks - GRI-GB-550 On the Glass Shock Snesor		Glass Break sensors will only be used upon permission from the owner.	
						Communication Module - Bosch B426		Bosch	The intrusion panels onboard communicator will be used to capacity before using the communication module. All additional communication modules needed will be the Bosch B426.
						Monitoring			Installer will work with owner and the current alarm monitoring company to ensure the system is online and communicating.
			Area/Zone Creation			All areas/zones created (physical and digital) will be approved by the owner.			
			Intrusion Panels will tie into the Lenel Card access system if it exists on site.			The Intrusion system's points will be imported ito the card access system and tracked via the Lenel-Bosch Integration in addition to being tracked at the panel. The intrusion system will also be set up in such a manner that a valid card read on pre-determined set of doors will de-activate the intrusion system if it is active.			
280000.03	Electronic Safety & Security	Security System Cabling				All security data cabling will be yellow . Duress system will be provided for Courts and other areas as determined from Safety and Security planning. New systems will match and be extensions to existing systems.	Copper Data Cabling: GenSpeed6000	Owner will provide direction during design development. Includes all security equipment.	

CSI	Section	Item	A	E	s	Standard	Reference	Additional Comments
281000.01	Electronic Safety & Security	General				Refer to County Security Policy concerning application and approval of card reader and camera locations. For New Construction - all security system power requirements will be identified and included in the building electrical design. All security systems will have battery back-up. Where available, security systems will be connected to UPS power systems or Generator power.	Lenel	Owner specifies. Security and duress systems specified by Owner will include: Network and stand alone capability; manual override ability; user friendly - simplicity; multi-building control and access; easily added onto; exterior doors fail closed; various alarm functions and have keyed access. Attachment of Security Cameras to the exterior of County Buildings will be reviewed and approved by Capital Projects prior to installation. No camera will be directly mounted on the top of any parapet cap flashing to prevent water intrusion into the wall cavity. All attachment hardware will be 316 stainless steel or approved equal. Any attachment to brick or block masonry will only be made at mortar joints and not in the field of the brick or block.
						Approved Installers - Pro-Tec Design 5929 Baker Rd, Minnetonka, MN 55345		
						Installer Qualifications - Certified Lenel Value Added Reseller Lenel Access Control Expert Certified Bosch Professional Certification (or higher) Lenel Intrusion Professional Certified Avigilon Authorized Partner Axis Certified Professional		Installer must provide proof of these qualifications to be approved.
281000.2	Electronic Safety & Security	Card Access				Card Access to tie into existing Lenel Onguard Access Control System. Contractor to provide any license adjustments to account for added equipment.		Owner will provide direction during design development
						Access Panel Controller - Lenel X Series		Add to existing controllers and locations where possible.
						Card Reader Control board - Lenel LNL-1320		All readers to tie to LNL-1320 unless alternate approved by Security Services Administrator.
						Input Module - Lenel LNL-1100		
						Output Module - Lenel LNL-1200		
						Standard Wiegand Card Reader - HID Signo 40 (Standard Profile)		Card Readers to read 125Khz HID Prox and 13.5MHz HID ICLASS SE Standard technologies
						Mullion Wiegand Card Reader - HID Signo 20 (Standard Profile)		Card Readers to read 125Khz HID Prox and 13.5MHz HID ICLASS SE Standard technologies
						Door Position Sensor - Recessed - GRI 180-12		When door has a card reader, Door Position Sensors to tie to Access Control controller. Access control will then send a dry contact for door status to the intrusion.
						Door Position Sensor - Surface - GRI 4400-A		
						Door Position Sensor - Garage Door - GRI 4700-A		
						Request to Exit - Bosch DS160		
						Door Release Buttons - Potter HUB-M		
						Power Supplies - Altronix AL600UL		
						Public Entry Doors		All public entrance doors will have an electric strike/lock controlled as an output by the card access system unless it has a dedicated reader. Refer to 80000.02 for electric lock/strike information.
						Door Forced Alarms		Door forced open alarms will be created with the associated REX device
			Door Held Open Alarms		Door held open alarms will be created with the associated REX device.			
			Lock Down Key Switches - Schlage 653-14 L2 NS 630		All buildings serving the public with a card access system will also install lockdown keyswitches at certain locations in the building to allow users to lockdown the building. Core of keyswitch provided by owner.			

CSI	Section	Item	A	E	s	Standard	Reference	Additional Comments
281000.03	Electronic Safety & Security	Cameras				All CCTV cameras to tie into existing County Avigilon Video Management System. Contractor to provide any additional licensing required for added equipment. Cameras to be placed per County Security Policy, Cameras shall be placed for monitoring and protection of County Staff, buildings, and equipment.	Avigilon	Owner will provide direction during design development. New servers or workstations to be provided by owner if required. Camera models below to be used as a general guideline, each camera model and months to be selected based on desired view.
						Interior Fixed Cameras: Axis P3267-LVE; Exterior Fixed Cameras - P3267-LVE; If camera models are discontinued at time of purchase; use the Axis P3267-LVE or Axis preferred replacement.	Axis	Existing Cameras to be reused when possible. County maintains a camera replacement cycle to ensure up-to-date cameras.
						Exterior Cameras Long View- Axis P3267-LVE; If camera models are discontinued at time of purchase; use the Axis Preferred replacement.	Axis	Primarily used for viewing Code Blue Towers.
						Multi Sensor Cameras: Exterior: Axis Q6010-E, Axis P3719-PLE, or P3807-PVE; Interior: M3067-P; If camera models are discontinued at time of purchase; use the Axis Preferred replacement.	Axis	The Q6010-E cameras should be used when their will be an attached PTZ or if there may be an attached PTZ in the future. The P3719-PLE or P3807-PVE should be used when it will only be a multi-Sensor camera. The M3047-P camera is currently only installed in the Data center.
						Exterior cameras PTZ + Panoramic - Axis Q6075-E + Axis Q6010-E; If camera models are discontinued at time of purchase; use the Axis Preferred replacement.	Axis	The Q6075-E cameras will draw power from Q6010-E Camera
283100.01	Electronic Safety & Security	Fire Detection & Alarm	A			The County has a "Fire Alarm Disabling Notification Policy" maintained by Building Services Manager.		The County's Project Manager (PM) shall work with the Building Services Manager and FM staff for any approved disabling. FM staff will handle any notifications. Designers should be aware of this policy and when appropriate, alert contractors to this necessary coordination within the project's contract documents (temp. facilities/controls spec).

CSI	Section	Item	A	E	s	Standard	Reference	Additional Comments
283100.02	Electronic Safety & Security	Fire Detection & Alarm				100% smoke detected including mechanical rooms/HVAC, electrical and storage rooms. Retrofitted and new installations will be "fully addressable" alarm systems. Replacement systems will be Honeywell Notifier. Changes to fire detection and alarm system, new or replacement must be reviewed by Factory Mutual. All system equipment must be UL approved and the complete finished system UL certified. Note: Central Station must be UL listed/approved via the annual service contract.. This includes a UL listed Contractor and UL certified runner to respond to all supervisory and trouble alarms.	Honeywell Notifier	For building additions - if existing system is older than 10 years, non-addressable technology, or not a Notifier or Simplex System, the system will be upgraded to fully addressable for the entire building to ensure accurate alarm reporting and troubleshooting. Separate costs will be identified in the CIP budget process for modifications to existing buildings. NOTE: Honeywell Notifier is proprietary and can only be installed by 4 certified Honeywell local vendors. 2011 - Factory Mutual review comment is for County to provide an FM Approved Central Station monitoring service. The Burnhaven Library was exempted short-term from this requirement.
						Fire Panels: Notifier Onyx Series (selections noted below)... NFS-320 for small system installations NFS-640 for mid-sized system installations NFS-3030 for large system installations	Honeywell Notifier	The exact panel selection is dictated by the size of the building and the number of devices connected to it.
						Manual Stations - NBG-12LX	Honeywell	
						Annunciator - LCD-160/LCD-80	Honeywell	An annunciator will likely only need to be used for larger buildings
						Photo Detector - FSP-951	Honeywell	
						Heat Detector - FST-951	Honeywell	
						Duct Detector - DNR(A) Detector with FSP-951R	Honeywell	
						Horn and Strobe - P2RL (Wall Mounts, PC2RL (Ceiling Mount)	Honeywell	
						Speaker and Strobe - SPSRL (Wall Mount) SPSCRL (Ceiling Mount)	Honeywell	
						Strobe - SCRL (Ceiling), SRL (Wall)	Honeywell	
						Horn - HRL (Wall)	Honeywell	
						Speaker - SPCRL (Ceiling), SPRL (Wall)	Honeywell	
						Monitor Module: FMM-1	Honeywell	
						Control Module: FCM-1	Honeywell	
						Relay Module: FRM-1	Honeywell	
						Dual Monitor Module - FDM-1	Honeywell	
						Dual Monitor Module - FDM-1	Honeywell	
						Wireless Gateway: FWSG (Swift Wireless Gateway)	Honeywell	Wireless will not be used without Owner Approval
						Wireless Detectors: Swift FWD-200P series	Honeywell	Wireless will not be used without Owner Approval
						Wireless Modules: Swift FW-MM FW-RM	Honeywell	Wireless will not be used without Owner Approval
			Dialer - Bosch B465 with B440 cellular module		Dialer to be a dual path, IP & Cellular, module. Data plan provided by County Security Vender. Existing dialers to be reused.			
			Wireless Notification Bases: Depends on device	Honeywell	Wireless will not be used without Owner Approval			
283149	HVAC	CO2 Detection			s	Provide carbon dioxide sensing devices in the ductwork and provide one ambient exterior CO2 detector.		To be used to address IAQ. Coordinate with BAS. CO2 detectors will periodically record readings.
310000	Earthwork	Elevator Jack Hole			s	Eliminate hydraulic jacks below grade. All elevators or elevator retrofits will be in shaft traction unit wherever possible.		Eliminate any potential for underground hydraulic oil spill contamination.
312316.01	Exterior Improvements	Excavation/trenching				Contractor notifies Owner and contacts Gopher One-call		Owner provides information for private utilities. Follow OSHA 1926.650 - 652.
312316.02	Earthwork	Excavation Rock				Include unit pricing with option for separate contracting		Undocumented rock outcropping - specify type and hardness (i.e. rippable and non rippable.) Most limestone at Hastings Government Center is nonrippable.
312323	Earthwork	Backfill				Structural fill will be clean "pit run" granular material		Compact to 95% of modified proctor

CSI	Section	Item	A	E	S	Standard	Reference	Additional Comments
321000	Exterior Improvements	Pavement Base			s	Thickness and type per soils report recommendations. In the absence of specific recommendation, base will be 12" Class VII with recycled content. The use of pervious pavement will be considered as an alternative for all projects including items such as "proof of parking."	Barton Sand & Gravel, 612.425.4191 Maple Grove	Use Class VII (recycled concrete) or recycled CLV aggregate, MnDOT 3138. MnDOT adopted policy in 1980 allowing use of salvaged concrete for aggregate base and stabilizing aggregate. Type and % of recycled content will be approved by Owner for each project. Base will extend beneath all curb and gutter.
321216.01	Exterior Improvements	Pavement Asphalt			s	Min. 4" in all parking areas 2" base and 2" wear course. Address in civil engineering design. Allow for the planned County use of heavy equipment for snow removal prior to frozen ground. All bituminous pavement depths must meet or exceed the required 4" thickness as determined by post-installation core sampling. Any nonconforming areas will be repaired with a minimum 1.5" wear course. MnDOT forgiveness calculation will not be used on any County building project.	MnDOT Hwy Mix	Minimum of 1 core per 2500 sy to verify - finish derivation +/- 1/4per 10 ft. and specified compressive strength of the installed pavement. Use as a minimum MnDOT percentages of recycled content i.e. crushed glass - sustainable building issue. Use only asphalt suppliers that have a recycled content program and use recycled asphalt materials such as TOSS (tear off roof shingle scrap) or MASS (post manufacturing shingle scrap). In 2008, only MASS was available. Pine Bend Paving is the local supplier. Bituminous tack coat will be per MnDOT Spec 2357.2. When exterior ambient air temperatures drop below 32 degrees F - medium cure (MC) cutback asphalts will be used during early and late construction season.
321216.02	Exterior Improvements	Pavement Bituminous			s	2" base course + 2" wear course all parking and driveway pavements - minimum pavement depth is 4".		Use MnDOT Shingle Scrap and glass aggregate design mixes.
321313	Exterior Improvements	Pavement Islands - Concrete				No landscaping or irrigation in small islands unless required by local ordinance or code.		Eliminate any small islands whenever possible and safe to do so. This provision may conflict with storm water site containment provisions. Options are depressed infiltration basins and islands large enough to support vegetation.
321313.01	Exterior Improvements	Concrete	A			Minimum 4000 psi - 1 - 4" slump - air entrained 5 - 8% (Only air entrainment admixture is permitted)	Portland Type I or II	The use of plasticizers is not allowed on any project unless approved in writing by the Owner. Requests to use of plasticizers with the justification must be submitted directly to the Owner for written approval. Finish burlap drag, broom finish or wood float as approved by Owner.
321313.02	Exterior Improvements	Pavement Concrete			Es	4,000 psi minimum 6" - reinforced. Truck traffic and dock areas - thickness per structural engineer. Dock levelers will be installed for new construction. All aprons adjacent to buildings will be 12" thick minimum and supported by building structural foundation shelf.		Finish burlap drag or wood float. Provide concrete pads for motorcycle parking - minimum one space for each building. Provide adequate bollards, crash rail, and dock bumpers to protect building at docks and areas directly exposed to vehicles.
321600	Exterior Improvements	Curb & Gutter	A			Specify no curb if permitted by local ordinance. Request variance with justification. If code requires curb - use MnDOT - spec D318 surmountable curb 1st and then B-618 at all pavement edges except HC ramping only if there are no other alternatives. Standard Plate No. 7100H. Ramped curb cuts will be broom finished - no exposed aggregate. Comply with local code when necessary. Check local codes/ordinances to determine if sheet drainage to adjacent planted areas can be used as part of storm water strategy for project.	MnDOT website	Finish burlap drag, wood float or broom finish. Install surmountable curbs for areas of rain gardens, snow stacking and parking lot expansions. Define all expansion joints clearly on plans and specify that Contractor is responsible to not have cracks in other locations of curbs. See MnDOT website at http://www.dot.state.mn.us/tecsup/splate/english/e7000/s7100h_spt.pdf
321723	Exterior Improvements	Pavement Marking			s	Actual parking space width 9' - 0" plus 4" for striping.		HC - blue with white insignia. Curb - yellow to 13538 FS 595A City of Eagan requires 10' wide spaces. Note: For parking code or ordinance requirements use proof of parking and efficient planning and design for
328400.01	Exterior Improvements	Irrigation			s	Porous Pipe subsurface irrigation system. SWCD - Promote the use of native vegetation and functional landscaping to help achieve this standard. The method and extent of irrigation to be used will be determined by the Owner for each project.	Aquapore Porous Pipe, MT1, Plymouth or Rainbird Xerigation Drip Irrigation.	Where possible - use drip irrigation system to conserve water and lower operating expenses by delivering water slowly to the plants root zones. Install rain fall sensors to control sprinkler systems. Use storm water harvesting and recycled storm water for irrigation.
328400.02	Exterior Improvements	Irrigation				Irrigate zoned critical areas adjacent to facilities. SWCD - Plantings and landscaping will be designed to meet multiple benefits (aesthetics, energy conservation, storm water runoff treatment, screening, etc.) and reduce the need for irrigation.	Rainbird, Toro	See Landscaping irrigation.

CSI	Section	Item	A	E	s	Standard	Reference	Additional Comments
329119	Exterior Improvements	Topsoil - Black Dirt			s	Reuse all acceptable topsoil on site. If required, add to/amend to create a minimum 6" topsoil cover. Roller compacted all lawn areas. To keep all areas open and accessible for inspection to ensure slab at grade waterproofing remains undamaged during construction. Topsoil-SWCD – Efforts will be made to avoid soil compaction and preserve existing topsoil. Employ techniques to restore soil structure such as deep ripping to 18" and incorporation of compost, or other approved soil amendment. The objective is to eliminate compaction in non-paved areas.	Consider specifying an organic topsoil that meets MNDOT 3877.2H for new planting beds.	See sustainability issue regarding low water moisture preservation. Need to pay special attention to construction compacted soils in non pavement areas including soil amendment. Evaluate what effect freeze thaw have upon materials prior to deep discing. Reduce paved walk areas and provide planted walk areas. Build sidewalks only when mud paths develop. Imported top soil shall at a minimum, meet MnDOT's common borrow requirements.
329219	Exterior Improvements	Seeding	A		s	Owner will provide mix specification for non-sodded areas		Emphasis will be on native and drought resistant grasses and incorporating soil amendments prior to seeding or planting.
329223	Exterior Improvements	Sod				Sod all critical areas adjacent to pavements and buildings. SWCD - Sod shall be used in high foot-traffic areas and native vegetation will be emphasized in most landscaping areas.		Comply with local ordinance 1st.
329300	Exterior Improvements	Security				Keep plantings away from immediate building walls.		Eliminate hiding places adjacent to entries and next to building. Provide clear sight lines for security patrols from lots about buildings.
						Planters or bollards to be placed to restrict vehicle access to front entryways and plazas.		
329333	Exterior Improvements	Shrubs	A		s	Use Minnesota Hardy stock - northern climate only		Plants rated for USDA Hardiness Zones 3b, 4a & 4b only.
329343.01	Exterior Improvements	Mulch			s	Install minimum 3' diameter about all new planted trees.		Planting areas will use landscape mulch. Rock will not be used as a mulch.
329343.02	Exterior Improvements	Tree Specification			s	Size - 4 with varieties of hardy local indigenous stock		Mix and random plant 2+ deciduous species and 2+ evergreen
329643	Exterior Improvements	Tree Installation			s	Plant to correct depth, cut/remove burlap and banding		Avoid placement of trees in sidewalk areas. Mix of deciduous & coniferous trees to be planted in asymmetrical patterns.
330000.01	Utilities	Pipe UG Warning Tape			s	Caution water, gas, electric, sewer below - 6" wide by 4 mils thickness.	Allen Sys, Embed, Seton	Bright colored - continuous tape a minimum of 12" above utility line. Provide metal marking signs on steel posts in high traffic areas.
330000.02	Utilities	Utility Separation				Do not cross water and sanitary or storm sewer lines.		Any variance requires written approval from City and Owner.
331113.01	Utilities	Pipe - potable water				All site water will be ductile iron		
331113.02	Utilities	Pipe - Thrust Blocks				Install concrete thrust blocks to address 100 psi minimum water pressure.		All underground systems.
331119	Utilities	Pipe - Fire	A			Ductile iron - post indicator will be as required by local fire code official.		Specify model and manufacturer if a specific model is not required by local code official or Factory Mutual.
331219	Utilities	Fire Hydrants				UL246, NFPA 24, AWWA C502	Need to specify	Strictly adhere to local jurisdiction or Fire Marshall requirements.
331233	Utilities	Water meter				City Standard - include RPZ (CSI 331213.13)		Provide independent owner meter(s) and multiple City meters for all buildings compatible with BAS for monitor and control of water use i.e. irrigation and boiler water makeup. Eliminate sewer and storm water fees from water bills for irrigation of water that does not enter these systems.
333113	Utilities	Pipe - Sanitary Sewer				Minimum building feed 6" - B&G to 8' then code to service		Ductile iron - push joints or fiberglass if permitted.
334113.01	Utilities	Pipe - Storm Sewer				2' and greater - RCP - 18" and smaller PVC or Fiberglass if Permitted		
334413.01	Utilities	Catchbasin covers				Loading - domed cast iron for landscaped areas. Use Heaviest Duty for driving surfaces.		Openings to be small enough to prevent access by children or bicycle tires.
334413.02	Utilities	Catchbasins concrete	A			Precast concrete - cast steps joint sealed. See Owner provided detail.		If permitted by local code, provide weep holes in the sides of the storm water sewer catch basins and manholes to allow water that migrates in the Class 5 base under the asphalt to weep into the storm water sewer system. Place screen over the weep holes to keep the Class 5 from falling into the storm sewer.
334613	Utilities	Pipe - Foundation Drain			s	PVC - perforated - filter fabric - 12" aggregate drain bed		Use Pipe product with recycled content when available.
334913.01	Utilities	Manholes - concrete				Precast concrete - joint sealed		

CSI	Section	Item	A E s		Standard	Reference	Additional Comments
334913.02	Utilities	Manholes - covers			Heavy duty cast iron ring and cover label "Storm Sewer" or "Sanitary Sewer"		ASTM A48 Class 35 B hot dip asphalt coated
335113	Utilities	Pipe - Natural Gas			As specified to meter by Utility		Provide independent owner meter(s) and submeters for buildings 30,000 sf and larger compatible with BAS for monitor and control of energy use. Example - Generators, boilers, etc.
337000	Electrical	New Service			480/277 volt Entry - Contractor to initiate request to Utility		Owner provides all construction power within existing buildings. Contractor to arrange for service installations on new work sites.
337139	Electrical Utilities	Electrical Lines			Direct buried underground rated - all copper.		All electrical lines will be located within 10' of perimeter property borders and enter the property and building at right (90°) angles to the property line at the shortest distance between the building and property line in order to quickly locate and minimize costs for future improvements. UG tape mark minimum 12" above lines. Lines to be 24" minimum deep unless approved in writing by Owner. All lines will have at least 2 permanent markers designating these lines. UG tape marker is required to be continuous within 12" of the top of the line. Reinforced concrete ductbank may be required by the Owner. Pipe sleeves or concrete ductbank is required under all pavements.
338200	Utilities	Communication Lines			Conduit encased underground rated - shielded copper and fiber.		All communications lines will be located within 10' of perimeter property borders and enter the property and building at right (90°) angles to the property line at the shortest distance between the building and property line in order to quickly locate and minimize costs for future improvements. Lines to be 24" minimum deep unless approved in writing by Owner. All lines will have at least 2 permanent surface markers designating these lines. UG tape marker is required to be continuous within 12" of the top of the line. Reinforced concrete ductbank may be required by the Owner. Pipe sleeves or concrete ductbank is required under all pavements. A metallic location wire will be buried with all fiber optic lines.

CENTRAL ENERGY PLANT STUDY

Dakota County Law Enforcement Center | June 22, 2023

PRESENTED BY
CMTA
BKBM Engineers
Gilbert Mechanical

CONTRIBUTORS

Dakota County Facilities Management

Project Date: March 2023 through June 2023

Project Location: Dakota County Law Enforcement
Center, Hastings, MN

CMTA Project #: 2023075

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EXECUTIVE SUMMARY

The Dakota County Law Enforcement Center (LEC) central heating and cooling systems are at a crossroads. The existing systems are aged, past their useful life, difficult to maintain and operate, and need to be updated as soon as budgets allow. Though the need to update the systems is apparent, the path forward is not. For this reason, the engineering services of CMTA were procured to study the options available to the County. Of the several options initially considered, three were chosen for detailed evaluation. These options are:

Option 1 – “Like for like” system replacement

Option 2 – Steam to hot water conversion

Option 3 – Conversion to geothermal

In weighing each option's first costs and energy efficiencies, CMTA believes the best path forward for the county is to proceed with option 2. This option replaces the low-efficiency steam boiler system with a new high-efficiency hot water boiler system with N+1 redundancy. The chilled water system is also replaced with a high-efficiency water-cooled N+1 redundant chilled water system. Last, but what might be most important, is the aged steam-heated air handler and HVAC infrastructure within the facility will be replaced with new variable air volume units with energy recovery where feasible. This project would reset the clock on a massive amount of deferred maintenance for the facility and in the end, leave the County with a boiler system that is 15% more efficient than the current one, a chilled water system that is 5-15% more efficient than existing, and an HVAC system that will reliably deliver proper heating, cooling, and ventilation for the facility for another 25 to 30 years and potentially more.

At an estimated construction cost of \$8,179,145 and a total estimated project duration of twenty-eight (28) months, this project will be an undertaking but, CMTA strongly believes this project to be necessary after nearly 35 years of system operation with few updates or replacements occurring over that time.

PROJECT INTRODUCTION

The Law Enforcement Center (LEC) and campus is located in Hastings, Minnesota and is a part of Dakota County. The county is comprised of 587 square miles and is the third-most populous county in the state of Minnesota. The county is located southeast of the Twin Cities Metropolitan area. The LEC is part of a campus consisting of three other buildings: Judicial Center [JDC], Juvenile Service Center [JSC], and Administrative Center [ADC].

The JDC is 182,000 and comprised of three floors. serves as the county's courtrooms and associated operations. This building was built in 1973 with upgrades from 2015 until present. The JSC is 57,000 and comprised of two floors and serves as the county's juvenile services. This building was built in 1978 with upgrades from 1997 until present. This building houses the county's juveniles and operation is 24/7. The ADC is 113,000 and comprised of three-floors serves as the county's administrative services. This building was built in 1989 with upgrades from 2002 until present. This building serves the county's public service & meeting plus government offices.

The LEC is 152,614 square feet and is comprised of three floors. The building was built in 1988 with multiple renovations and upgrades from 2003 until present. This building serves as the county's only jail and is 24/7 operation. The building contains two central steam boilers, steam to heating water converter, and a chilled water system that consists of two chillers and a three-cell cooling tower. The extent of the existing systems serving the LEC building will be described in the paragraphs below.

Heating System Summary

There are two (2) 5,050 MBH dual fuel low-pressure steam boilers that serve the heating needs of the LEC that were installed in 1988. The total connected simultaneous load is roughly 8,000MBH however; the actual running load due to system diversity and heating coil redundancy is between 4,500 to 5,000MBH. This operating load and diversity are substantiated by operating experience in which the one existing boiler is able to carry the load for the building throughout the winter. With this diversified load, the existing system does support N+1 redundancy in steam generation. The feedwater system, condensate system, and all steam system piping are largely original to the 1988 facility construction as well. This places all of these assets at 35 years of age which is well past the ASHRAE median life expectancy (no more than 25 years) for this equipment.

A majority of the air distribution equipment within the facility is directly steam heated. Supplemental heating such as VAV reheats, radiation, cabinet unit heaters, suspended unit heaters, etc. are served from a central steam-to-hot water heat exchanger and redundant pump set with a heating capacity of 2,800 MBH. That heat exchanger was replaced in 2007 and appears to be in good condition.

Steam is also connected to a snowmelt steam-to-hot water heat exchanger and pump skid estimated at 1,000 to 1,500MBH. The snowmelt system is original to the 1988 construction of the facility and would benefit from either a replacement or, at minimum, a controls upgrade.



Image 1 – Image of Existing Boiler

Chilled Water System Summary

The current connected system tonnage is roughly 350-tons however, with system diversity and energy recovery the operating tonnage of the system is closer to 175 to 200 tons. This operating tonnage and diversity are substantiated by operating experience in which the largest existing electric chiller is able to carry the load for the building throughout the summer on its own. The existing chilled water system is a water-cooled central plant that includes the following equipment:

- (1) 175-ton water-cooled electric chiller
- (1) 75-ton water-cooled electric chiller
- (1) 700-ton, 3-cell cooling tower
- (2) Chilled water pumps
- (2) 2,100 gpm, 75HP condenser water pumps

The chillers and chilled water pumps are original to the 1988 construction of the building and are past their useful life of no more than 25 years. In 2013 the 700-ton cooling tower and new condenser water pumps were installed and are in fair condition today. The condenser water system serves both LEC chillers as well as the redundant 220-ton chillers located in the Judicial Center.



Image 2 -Existing 175-ton chiller

Air Distribution System Summary

There are ten (10) air handling units in the LEC which are directly steam heated and are original to the 1988 construction of the building. All ten of these units are past their useful life. Of these units;

- Nine (9) are cooled via the central chilled water system with AHU-11 having no cooling as it provides boiler room ventilation only.
- Eight (8) units have steam humidifiers included as part of their original design with AHU-7 and AHU-11 having no humidification.

In addition to the ten air handling units original to the 1988 construction, there are two air handling units (AHU-13 and AHU-14, installed in 2002 and 2007 respectively) that are indirectly heated from the steam boiler system via steam-to-hot water heat exchangers. These units are also connected to the central chilled water system. Both units are in fair condition and replacement of these units does not appear to be necessary. A summary of the air distribution equipment original to the 1988 construction is shown in the table below.

Low-Pressure Steam Air Handling Equipment						
Equipment Tag	Supply Airflow (CFM)	Preheat Coil (MBH)	Purge Heat Coil (MBH)	Steam Humidifier (lbs/hr)	Cooling Coil (MBH)	Equipment Age
AHU-1	6,840	223	N/A	76	241	1988
AHU-2	9,185	299	N/A	102	265.8	1988
AHU-3	14,925	485	N/A	165	432	1988
AHU-4	8,920	290	581	99	285	1988
AHU-5	7,610	510	660	85	204	1988
AHU-6	7,960	535	691	88	214	1988
AHU-7	7,500	244	487	N/A	415	1988
AHU-9	10,600	713	920	118	312	1988
AHU-10	10,080	328	875	111	325	1988
AHU-11	3,300	323	N/A	N/A	N/A	1988



Image 3 – Existing Air Handling Unit

Energy Usage

CMTA received electric and gas utility billing from Dakota County for the year of 2022 in an attempt to quantify the LECs energy use intensity (EUI) in kBtu/sq.ft for heating and electricity. Calculating the EUI for the LEC on its own proved problematic as the natural gas consumption for the LEC is connected to a natural gas meter which also serves other buildings on campus. As such, the information necessary to calculate EUI for only the LEC square footage was unavailable. Since this calculation could not be performed, CMTA utilized the utility information to calculate the EUI of the campus as a whole. Based on the 2022 utility bill information, the overall EUI of the Dakota County campus is 72.1. Of this total, 31.1 is from electrical usage while 41 is from natural gas consumption. While there is room for improvement within this number, CMTA must note this is a relatively favorable “score” considering the LEC is heated with steam and there are more than one 24/7 operation facility on the campus.

SYSTEM OPTIONS

With a baseline understanding of the LEC’s heating, air conditioning, and air distribution systems, CMTA turned its attention to the options available for central plant upgrades. Options studied are detailed within this section of the report, however, there is one important point to be made before any options are detailed. Common to all options studied, CMTA recommends that all existing original 1988 air handling units be replaced with new units in conjunction with the central plant upgrades project. All ten (10) of the 1988 original construction air handling units are past their useful life and should plan to be replaced within the next three (3) to five (5) years. Leaving these units as-is or retrofitting them with new heating water coils is not recommended. Proceeding in either of those directions would only serve to do one of two things. It would either lock the facility into the use of a low-efficiency steam heating system for another 25 to 30 years while also leaving a large amount of deferred maintenance in air distribution systems or; it would make an investment for hot water coil retrofits into air distribution equipment that again is recommended by CMTA to be replaced in the next three (3) to five (5) years.

The recommendation to plan for air distribution system replacements is not one that CMTA has taken lightly. CMTA understands this will further the capital request for the central plant upgrades projects. We also understand this may add complexity to the phasing of the project. While these are both challenges to the project, CMTA strongly believes this path forward is the best long-term solution for the facility.

With this part of the scope included in all options considered, the remainder of this section will describe the options studied.

Option 1 – “Like for Like” System Replacement

This option would consist of replacing the existing steam boiler system (boilers, feedwater system, and condensate pumps) with a new N+1 redundant steam boiler system. Along with replacing the steam system equipment, all steam system piping would be replaced throughout the facility. Dakota County facilities management staff has noted leaks occurring in the steam system piping at an increased frequency as time passes. Patching of leaks has taken place on an as-needed basis, but it is likely that patching will either become cost prohibitive or simply not possible in the future. Therefore, the replacement of all steam system piping is included in the like-for-like option.

Regarding the chilled water system, the existing chillers and chilled water pumps would be removed and replaced with a new N+1 redundant constant primary, variable secondary pumping chilled water central plant. The existing cooling towers and condenser water pumps would be reused as they are in fair condition and of sufficient capacity for a new chiller system. Chilled water piping would be reused throughout the facility.

As mentioned, all air handling units would be required to be replaced as part of this option. New air handling units are assumed to be of the same supply airflow capacity as the existing ones. All new units would be steam heated, steam humidified, chilled water air-conditioned, and variable volume airflow. The new units would also receive all new DDC controls. Where practical, the new units would be engineered to include heat recovery. The practicality of this is related to many factors including but not limited to:

1. Physical space available for energy recovery heat exchangers
2. Location of exhaust air streams and the level of construction required to collect/recover the heat from the exhaust streams.
3. The overall cost of energy recovery installation versus the energy savings (i.e. financial payback analysis).

The engineering phase of this project should navigate the above factors and determine where energy recovery is responsibly implemented.

Within this option, existing steam-to-hot water heat exchangers and snowmelt systems would remain and be reused. This equipment is either relatively new, functions reasonably well, or could be replaced/upgraded under maintenance or stand-alone projects in the future. Refer to the table on the next page for a list of equipment that will be in place once this proposed project is completed. Within this table, green cells indicate new equipment/systems, yellow cells indicate existing equipment/systems in good condition to be reused for a period of ten (10) years or more, and red cells indicate existing equipment that may need to be replaced five (5) to ten (10) years or later after this project option has been completed. Along with this table, also refer to the “Scope of Work Options” section of this report for a detailed scope of work for this option.



Equipment	After Proposed Project
Boiler-1	Steam
Boiler-2	Steam
Boiler Feed Tank Skid	Steam
Steam Condensate Pumping Skids (five total)	Steam
AHU-1	Steam & Chilled Water
AHU-2	Steam & Chilled Water
AHU-3	Steam & Chilled Water
AHU-4	Steam & Chilled Water
AHU-5	Steam & Chilled Water
AHU-6	Steam & Chilled Water
AHU-7	Steam & Chilled Water
AHU-9	Steam & Chilled Water
AHU-10	Steam & Chilled Water
AHU-11	Steam & Chilled Water
AHU-13	Existing to Remain
AHU-14	Existing to Remain
LEC 1988 Snowmelt System	Existing to Remain
LEC 1988 Steam to HW HX & Pumps	Existing to Remain
LEC 2002 Addition Steam to HW HX & Pumps	Existing to Remain
LEC 2007 Addition Steam to HW HX & Pumps	Existing to Remain
Steam System Piping	Steam
Chiller-1	Chilled Water
Chiller-2	Chilled Water
Chilled Water Pump #1	Chilled Water
Chilled Water Pump #2	Chilled Water
Chilled Water System Piping	Existing to Remain
Cooling Tower System	Existing to Remain
Cooling Tower System Piping	Existing to Remain
Legend	
New	
Reused. Good Condition. 10 years or more of useful life remaining	
Reused. Fair Condition. 5 to 10 years of useful life remaining	

Option 2 – Steam to Hot Water Conversion

This option would consist of converting the existing steam heating system to a hot water heating system. To accomplish this conversion, all existing steam heating system equipment and piping would be removed and a new dual fuel (gas/oil) N+1 redundant high-efficiency condensing boiler system would be installed. New hot water piping would be run to all existing air handling units and to existing steam-to-hot water heat exchangers. Existing heat exchangers and pump sets would be removed, and the existing hot water piping would be connected to the new hot water piping from the new boiler system.

Regarding the chilled water system, the existing chillers and chilled water pumps would be removed and replaced with a new N+1 redundant constant primary, variable secondary pumping chilled water central plant. The existing cooling towers and condenser water pumps would be reused as they are in fair condition and of sufficient capacity for a new chiller system. Chilled water piping would be reused throughout the facility.

For this option, all air handling units would be replaced as mentioned. New air handling units are assumed to be of the same supply airflow capacity as the existing ones. All new units would be hot water heated, chilled water air-conditioned, and variable volume airflow. The new units would also receive all new DDC controls and, where practical, energy recovery. New units could also be fitted with new humidifiers if desired by the County. Whether or not to install humidifiers and what type of humidifiers would be subject to the final engineering of the project.

Refer to the table on the next page for a list of equipment that will be in place once this proposed project is completed with color coding as described under option 1. Again, also refer to the “Scope of Work Options” section of this report for a detailed scope of work for this option.



Equipment	After Proposed Project
Boiler-1	Hot Water
Boiler-2	Hot Water
Boiler-1 Primary Pump	Hot Water
Boiler-2 Primary Pump	Hot Water
Heating System Secondary Pump #1	Hot Water
Heating System Secondary Pump #2	Hot Water
AHU-1	Hot water & Chilled Water
AHU-2	Hot water & Chilled Water
AHU-3	Hot water & Chilled Water
AHU-4	Hot water & Chilled Water
AHU-5	Hot water & Chilled Water
AHU-6	Hot water & Chilled Water
AHU-7	Hot water & Chilled Water
AHU-9	Hot water & Chilled Water
AHU-10	Hot water & Chilled Water
AHU-11	Hot water & Chilled Water
AHU-13	Existing to Remain
AHU-14	Existing to Remain
Heating System Piping	Hot Water
Chiller-1	Chilled Water
Chiller-2	Chilled Water
Chilled Water Primary Pump #1	Chilled Water
Chilled Water Primary Pump #2	Chilled Water
Chilled Water Secondary Pump #1	Chilled Water
Chilled Water Secondary Pump #2	Chilled Water
Chilled Water System Piping	Existing to Remain
Cooling Tower System	Existing to Remain
Cooling Tower System Piping	Existing to Remain
Legend	
New	
Reused. Good Condition. 10 years or more of useful life remaining	
Reused. Fair Condition. 5 to 10 years of useful life remaining	

Option 3 – Conversion to Geothermal

For this option, a geothermal well field would be constructed, and an N+1 redundant industrial heat pump central plant would also be constructed to produce hot water, chilled water, or both simultaneously. Again, with this option, all air handling units would be replaced with new with variable air volume supply fans, hot water heating, chilled water cooling, and if desired, humidification.

Important to note is the viability of this option is speculative in nature as of the time of this study. To know whether or not this option is possible, test borings would be required to determine the subsurface structure and conductivity. It is understood there are likely substantial rock formations on the campus which may make installation of a wellfield cost prohibitive. For this study, CMTA has assumed a wellfield can be installed. This assumption has been made to obtain cost estimates for what would be a “best case” scenario and then compare/contrast the “best case” costs against Options #1 and #2. If even the “best case” scenario is cost prohibitive, there would be no further justification for pursuing conversion to geothermal.

Refer to the table on the next page for a list of equipment that will be in place once this proposed project is completed with color coding as described under option 1. Again, also refer to the “Scope of Work Options” section of this report for a detailed scope of work for this option.



Equipment	After Proposed Project
Geothermal Well Field, Pumps, HXs	Geothermal Water
400kW (thermal output)Industrial Heat Pump #1	Hot Water & Chilled Water
400kW (thermal output)Industrial Heat Pump #2	Hot Water & Chilled Water
400kW (thermal output) Industrial Heat Pump #3	Hot Water & Chilled Water
400kW (thermal output)Industrial Heat Pump #4	Hot Water & Chilled Water
400kW (thermal output) Industrial Heat Pump #5	Hot Water & Chilled Water
Heat Pump #1 Hot Water Primary Pump	Hot Water
Heat Pump #2 Hot Water Primary Pump	Hot Water
Heat Pump #3 Hot Water Primary Pump	Hot Water
Heat Pump #4 Hot Water Primary Pump	Hot Water
Heat Pump #5 Hot Water Primary Pump	Hot Water
Heat Pump #1 Chilled Water Primary Pump	Chilled Water
Heat Pump #2 Chilled Water Primary Pump	Chilled Water
Heat Pump #3 Chilled Water Primary Pump	Chilled Water
Heat Pump #4 Chilled Water Primary Pump	Chilled Water
Heat Pump #5 ChilledWater Primary Pump	Chilled Water
Heating System Secondary Pump #1	Hot Water
Heating System Secondary Pump #2	Hot Water
AHU-1	Hot water & Chilled Water
AHU-2	Hot water & Chilled Water
AHU-3	Hot water & Chilled Water
AHU-4	Hot water & Chilled Water
AHU-5	Hot water & Chilled Water
AHU-6	Hot water & Chilled Water
AHU-7	Hot water & Chilled Water
AHU-9	Hot water & Chilled Water
AHU-10	Hot water & Chilled Water
AHU-11	Hot water & Chilled Water
AHU-13	Existing to Remain
AHU-14	Existing to Remain
Heating System Piping	Hot Water
Chilled Water Secondary Pump #1	Chilled Water
Chilled Water Secondary Pump #2	Chilled Water
Chilled Water System Piping	Existing to Remain
Legend	
New	
Reused. Good Condition. 10 years or more of useful life remaining	
Reused. Fair Condition. 5 to 10 years of useful life remaining	

Structural and Electrical Considerations

Regardless of the options chosen, our study of the existing structure and electrical infrastructure has yielded the same conclusions which are as follows:

- Structurally, the initial review of the facility has not yielded any major structural concerns related to any scopes of work nor has it yielded any anticipated structural reinforcements required to execute any of the scopes of work. The main potential structural scope of work for this project would be to provide a temporary opening in the main LEC mechanical room wall or roof structure to remove existing equipment and install new. Once equipment demolition and installation of new are complete, the wall or roof would be patched back to its original condition. The exact method of temporary opening will be determined during the engineering phase of the project. Important to note is this is only potentially necessary. It is possible, if not even likely, that by utilizing modular chillers and field-erected boilers, any structural openings could be avoided. During the engineering phase of this project, it is recommended to fully vet field-constructed equipment versus factory-packaged equipment requiring a wall or roof opening.
- Electrically, the infrastructure while aged appears to be in fair condition and it also appears to be of sufficient capacity to power any new equipment. Major electrical distribution or service upgrades are not foreseen to be required at the time of this study. The electrical scope of work will include replacing the MCC section in the main LEC main mechanical room with a new more modern main distribution panel. It will also include providing new branch panels and circuits to power all new mechanical equipment as well as new feeders to the new equipment in all options.

The important conclusion to draw from our study of the structural and electrical infrastructure is these systems appear to only require modification as needed to allow for the LEC mechanical system infrastructure to be replaced. Large amounts of structural reinforcement or electrical upgrades will most likely be avoided.

Options Considered but Ultimately Not Studied:

Initially, CMTA desired to study converting the entire campus to singular central heating and cooling plant and eliminate the individual heating/cooling generation systems in each building. As the study developed and CMTA became aware of the existing conditions and the future of the facilities, we concluded this would not be a practical option for the campus. The reasons we are not finding this as a practical option are as follows:

1. We are not finding enough building space available to create a central plant for the entire complex. Some type of central plant building addition would be needed to create a consolidated space and during the kick-off meeting, we were informed that any type of building addition wouldn't be an option. This is really the major sticking point that closes off looking at more than the three options detailed.
2. The ADC is in immediate need of the boiler chiller replacement. As such, there is no 25-year horizon in which this would get connected to a central plant.
3. The boiler system in the judicial center is less than 5 years old. As such, there is no 20 to 25-year horizon in which this building would get connected to a central plant.
4. Piping routing from a central plant to the other heating/cooling systems would be very difficult and likely cost prohibitive.

With two buildings that don't have an immediate horizon for connection to a central plant, as well as the lack of space for a central plant, CMTA has considered the three options detailed.

SCOPE OF WORK OPTIONS

After discussion with facilities and review of existing facility conditions, it is imperative to replace the existing steam heating and chilled water systems regardless of the replacement option selected. Below is a summary of the steam heating system that needs to be removed.

- Remove existing steam and condensate return piping insulation.
- Remove existing steam and condensate return piping, fittings, valves, and associated components.
- Remove existing boiler feed piping insulation.
- Remove existing boiler feed piping, fittings, valves, and associated components.
- Remove existing valves, strainers, and steam traps serving existing air handling units, humidifiers, heat exchangers, etc.
- Remove existing condensate pumps.
- Remove existing dual-fuel steam boilers.
- Remove the existing boiler blowdown separator.
- Remove the existing boiler feed unit and associated pumps.
- Remove existing steam control valve stations for air handling units, humidifiers, heat exchangers, etc.
- Remove existing controls for the heating system and air handling systems.

Below is a summary of the chilled water system that would need to be removed.

- Remove existing chillers.
- Remove existing chilled water pumps.
- Remove the existing air separator and expansion tank.
- Remove existing controls serving the chilled water system.

Option 1 – “Like for like” System Replacement Scope of Work

The following is a summary of the new scope of work required for a like-for-like steam heating system replacement.

- New steam and condensate return piping insulation.
- New steam and condensate return piping, fittings, valves, and associated components.
- New boiler feed piping insulation.
- New boiler feed piping, fittings, valves, and associated components.
- New valves, strainers, and steam traps serving new air handling units.
- New duplex condensate tank and pump skids. Five (5) new skids will be required.
- New dual-fuel steam boilers. Two new 5,000MBH natural gas and No.2 fuel oil boilers will be required.
- New boiler blowdown separator.
- New 5,000MBH N+1 redundant pumping boiler feed unit.
- New steam control valve stations for air handling units, humidifiers, heat exchangers, etc.
- New air handling units to replace the existing original 1988 air handling units. Eleven (11) new units will be required. The supply airflow of the new units is assumed to match the existing unit supply air flows. New units to be steam heating, chilled water air conditioning, with steam humidification.
- New DDC controls for all new air handling units.

The following is a summary of the new scope of work required for a like-for-like chilled water system replacement.

- New N+1 redundant lead/lag chillers each chiller sized for 250-tons of cooling.
 - Note, the estimated chiller size has increased from the existing as it is likely that when air handling units will be replaced, they will require more outside air and greater air conditioning than the existing units.
- New constant volume chilled water primary pumps. One for each new chiller, fifteen (15) horsepower each will be required.
- New variable volume chilled water secondary pumps with variable frequency drives. Two new pumps (one operating, one backup), thirty (30) horsepower each.
- New air separator and expansion tank.
- New DDC chilled water system controls.

Option 2 – Steam to Hot Water Conversion Scope of Work

The following is a summary of the new scope of work required for a hot water conversion.

- Two (2) new 5,000MBH dual-fuel (natural gas and No.2 fuel oil) high-efficiency condensing type hot water boilers designed for a 110°F entering water temperature and a 140°F leaving water temperature. New boiler primary pumps. One for each new boiler, fifteen (15) horsepower each will be required.
- New heating water variable volume secondary pumps with variable frequency drives. Two new pumps (one operating, one backup) at fifty (50) horsepower each will be required.
- New air separator and expansion tank.
- New DDC controls system for the new heating water boiler system.
- New heating water distribution piping to replace all existing steam piping.
- New air handling units to replace the existing original 1988 air handling units. Eleven (11) new units will be required. The supply airflow of the new units is assumed to match the existing unit supply air flows. New units to be water heating and chilled water air conditioning.
- New DDC controls for all new air handling units.

The chilled water upgrades for system option #2 be upgraded with all components described in system option #1. The chilled water scope for Option #1 and Option #2 will be identical.

Option 3 – Conversion to Geothermal

The following is a summary of the new scope of work required for conversion to geothermal.

- Geothermal well field with wells drilled at 300 feet. Total well field capacity to be 5,000MBH.
- Five (5) new 400kW capacity industrial simultaneous heating and cooling heat pumps. Oilon model RE or similar will be installed in the main LEC mechanical room. On peak heating days this would result in four operating and one backup heat pump. Heat pumps will be capable of supplying 140°F heating water and 42°F chilled water.
- Five (5) constant volume five (5) horsepower primary heating water pumps, one for each heat pump.
- One (1) 1,500-gallon heating water buffer tank.
- Two (2) variable volume fifty (50) horsepower heating water secondary pumps with variable frequency drives.
- Five (5) constant volume five (5) horsepower primary chilled water pumps, one for each heat pump.
- One (1) 1,500-gallon chilled water buffer tank.
- Two (2) variable volume thirty (30) horsepower chilled water secondary pumps with variable frequency drives.
- New DDC control system for the geothermal well field and the industrial heat pump system.
- New heating water distribution piping to replace all existing steam distribution piping.

PROJECT OPTION COSTS

Below is a summary of the costs for each option for this project. The recommended project budget total is found in the last cell of each option. The recommended total is made of two components which are construction costs and soft costs. Construction costs shown below include the estimate provided by CMTA's cost estimator (Gilbert) and as well as a design uncertainty factor that comes at the study phase of the project. Soft costs account for project expenses not directly related to physical construction such as design fees, permitting costs, and project management amongst many other owner born costs.

Option 1 - Like for Like Replacement	
Construction Costs	\$ 7,018,881
Soft Costs (25%)	\$ 1,754,720
Total	\$ 8,773,602

Option 2 - Steam-to-Hot Water Conversion	
Construction Costs	\$ 6,543,316
Soft Costs (25%)	\$ 1,635,829
Total	\$ 8,179,145

Option 3 - Conversion to Geothermal	
Construction Costs	\$ 7,599,591
Soft Costs (25%)	\$ 1,899,898
Total	\$ 9,499,489

As shown above, Option 2 is the lowest capital cost at a recommended project budget of \$8,179,145. Option 1 is estimated to require a greater capital expense than Option 2 and with this option providing very little efficiency gain/benefit, this option in CMTA's opinion warrants no further consideration.

Option 3 is the most capital-intensive option and does come with efficiency benefits, however, it does not come with enough of an efficiency gain to warrant it as the recommended option for this project. In reviewing the costs to convert heating from natural gas to electricity utilizing heat pumps, it is estimated this will save the County less than \$20,000 per year in utility spend during the heating season. While the heat pumps are also more efficient than chillers, there is also no more than \$20,000 in savings per year during cooling. This would put the total utility savings for Option 3 at \$40,000 per year or less. At an additional \$1.32 million in capital for Option 3 versus Option 2, the simple payback for the heat pump system will be thirty-three (33) years and this is in the best-case scenario in which a traditional well field can be constructed which, as previously mentioned, is uncertain. Even in this best-case scenario, the length of payback is not favorable and as such, CMTA does not recommend proceeding with Option 3.

RECOMMENDATIONS

Considering cost and energy efficiencies, CMTA recommends the county pursue option #2 to convert the heating system to high-efficiency hot water, replace the chiller plant, and replace all existing 1988 air handling units. We have come to this conclusion for the following reasons:

1. It is the lowest first-cost option.
2. It improves the efficiency of the boiler system by 15% year-round.
3. It will improve the efficiency of the chilled water system by 5-15%.
4. It will replace a substantial amount of deferred maintenance.

Option #1 is not recommended as it has a higher first cost than Option #2 and is less efficient. Option #3 is the most energy efficient. However, the first cost of this project is substantial, to the point where there would be no reasonable financial payback on the investment.

PHASING & SCHEDULE OF SELECTED OPTION

Timing of the entire project schedule (design and construction) will be critical to the overall success of the project. CMTA estimates this project to be a seven (7) month design, bidding, and contracting schedule with a construction duration of twenty-one (21) months for a total project duration of twenty-eight (28) months. With this schedule, the start date of the design is very important. CMTA has assumed a design start date of February 2024. This date best fits the construction schedule with projected equipment lead times. If for some reason design cannot start in February of 2024, the overall project duration would likely be longer to align equipment lead times with a spring-summer-fall construction start for boiler system and air handler replacements.

Project execution will require two steps with the first step having two parts referred to as Step 1a and Step 1b. This first step would replace the existing boiler system and all of the existing steam air handlers. The second step (Step 2) would replace the chilled water system. It may be possible that Step 1 and Step 2 could be distinct projects that are bid and awarded as different contracts. This isn't recommended by CMTA as it adds complexity and likely time in achieving the final (total) construction, but it may be an option if necessary due to budgeting.

For the purposes of this study, CMTA has assumed the recommended scope of work is completed under one project. The remainder of this section will include a narrative of the proposed phasing plan as well as a milestone schedule and durations assuming a February of 2024 start of design.

Step 1a – 2025 Spring shutdown of the heating system. Remove all steam infrastructure and install new hot water infrastructure. This would occur from spring through summer with a fall startup of the hot water boiler system.

Step 1b – During the spring-summer-fall shutdown of the boiler system, systematically shut down one air handler at a time and replace each air handler one by one. Limit shutdowns to the shortest durations possible. Remove an air handler and install a new one in its place. Provide new hot water and chilled water coil piping. Reconnect the new chilled water coil piping to the existing piping distribution system that is being reused. Start-up and successfully commission an air handler on cooling before moving to the next one. This approach will limit shutdowns to particular areas for as short a duration as possible. Once a new air handler is operational, it will be able to provide cooling throughout the spring-summer-fall. Once the startup of the boiler system is complete, each air handler heating coil can be commissioned at the end of fall/early winter.

Step 2 – In the Fall of 2025 and Winter of 2026, shut down the chilled water system and replace the chiller plant. Install new chillers and chilled water pumps and reconnect to the existing chilled water and condenser water piping. Complete construction in the Spring of 2026. Once cooling season begins in spring, complete start-up and commissioning of the chiller plant.

TASK	START	END
Phase 1 - Design Phase		
Design	2/1/24	7/1/24
Phase 2 - Bidding and Contracting		
Bidding	7/1/24	7/28/24
Contracting	7/29/24	9/1/24
Phase 3 - Construction		
Submittal Review and Procurement	9/1/24	10/15/24
Equipment Lead Times	10/15/24	6/15/25
Step 1a & 1b Onsite Construction	4/1/25	10/1/25
Step 2 Onsite Construction	10/1/25	4/15/26
Chiller System Startup	4/15/26	5/1/26
Final Punch-Lists and Project Closeout	4/15/26	6/15/26

SUMMARY

As stated, CMTA believes option 2 is the best path forward for the County. Many options have been considered and studied thoroughly and this option is believed to yield the best results.

It has been a pleasure for CMTA to provide our engineering services to Dakota County on this study. We hope we have conveyed a high level of competence and passion for your facility and your upcoming project. We appreciate being given the opportunity to work with the County on this effort. CMTA is prepared to assist the County in whatever means necessary to move forward with the selected option. Please let us know what you need from us, we are here to help.

