

Board of Education Regular Meeting
Red Willow School District #73-0017
McCook Public Schools
6:40 PM Monday, August 9, 2021
Junior High Conference Room
800 West 7th St
McCook, NE 69001

1. Call to Order

1.1. Roll Call

1.2. Recognition of Open Meeting Law

1.3. Pledge of Allegiance

2. Reports, Communications & Public Participation

2.1. Public Participation

2.1.1. Board accepts public comments

2.1.1.1. The Board of Education will accept public comments on Elementary and Secondary School Emergency Relief Funds. Federal requirement
This agenda item was added to meet a federal requirement concerning the use of ESSER funds.

2.1.1.2. The Board of Education will be accepting comments on reopening schools. Federal requirement
This agenda item was added to meet a federal requirement concerning the reopening of schools.

2.2. Teammates

3. Consent Agenda

3.1. Approval of Minutes

3.2. Approval of Expenditures/Payroll for July

4. Reports from Staff Members and Committees

4.1. Facilities Committee

5. Board and Administrative Comments

5.1. Administrative Comments

5.1.1. Area Membership Meeting Wednesday, August 25 in North Platte

4:30 PM - Registration, Networking & Exhibitors

5:00 PM - Opening Session

5:45 PM - Break & Exhibitors

6:00 PM - Training Sessions #1

6:35 PM - Break & Exhibitors

6:45 PM - Training Sessions #2

7:25 PM - Networking Dinner & Awards/Recognition

5.2. Business Manager Comments

5.3. Reports from Building Administration

5.4. Board Comments

6. New Business

6.1. Review and Approve File: 504.20 Elementary and Secondary: Activities conduct (bullying prevention)

6.2. Approve 2021-2022 Option Enrollment Resolution

6.3. Approval of local substitute certificates

6.4. Approve student fees.

6.5. Approve HVAC project

7. Positive Comments

8. Adjournment

9. Items for Review

Board of Education Regular Meeting
McCook School District #73-0017
6:30 PM Monday, July 12, 2021
Junior High Conference Room
700 West 7th Street
McCook, NE 69001

"It is the mission of McCook Public Schools to equip all students to succeed
in a complex global society"

Notice of the meeting was given in advance by publication in accordance with the Board approved method for giving notice of meetings. Notice of this meeting was given in advance to all members of the Board of Education and published on July 6th, 2021 in the McCook Gazette. Availability of the agenda was communicated in the publicized notice and a current copy of the agenda was maintained as stated in the publicized notice. All proceedings of the Board of Education, except as may be hereinafter noted, were taken while the convened meeting was open to attendance of the public.

1. Call to Order

President Tom Bredvick called the July 12, 2021 MPS Board of Education meeting to order at 6:31 p.m. Roll call with the following members being present: Dennis Berry, Tom Bredvick, Brad Hays, Mike Langan, and Teresa Thomas; Absent: Loretta Hauxwell.

Mr. Bredvick reminded those present of the Open Meetings Law on the entryway table and asked all to stand and join him in reciting the Pledge of Allegiance.

Tom Bredvick moved to approve the Appointment of Business Manager, Jeff Gross as treasurer of McCook Public Schools District 73-0017 and recording secretary for the Board of Education, with a second by Brad Hays.

Dennis Berry:	Yes
Tom Bredvick:	Yes
Loretta Hauxwell:	Absent
Brad Hays:	Yes
Mike Langan:	Yes
Teresa Thomas:	Yes

Motion carried on a 5-0 vote

Tom Bredvick moved to approve the absence of Loretta Hauxwell with a second by Brad Hays.

Dennis Berry: Yes
Tom Bredvick: Yes
Loretta Hauxwell: Absent
Brad Hays: Yes
Mike Langan: Yes
Teresa Thomas: Yes
Motion carried on a 5-0 vote

2. Reports, Communications & Public Participation

Under Public Participation Melissa Cary discussed the health standards currently being proposed by the State. She passed out materials that pertain to the health standards. She really thanked the Board for taking a stance. She does ask that everyone is aware of Next-Gen Science standards that are currently being reviewed at the state level. And also asked that the school look into what is being taught in Dual credit classes with MCC, and make sure parents are made aware.

Also speaking was Kassie Thieszen. She stated her strong opposition to the health standards and critical race theory, and she asked the board to please review and keep eyes open to all changes in every curricular area. She requested the school board make face masks optional regardless of the directed health measures.

3. Consent Agenda

Dennis Berry moved to approve the Consent Agenda with a second by Teresa Thomas.

Dennis Berry: Yes
Tom Bredvick: Yes
Loretta Hauxwell: Absent
Brad Hays: Yes
Mike Langan: Yes
Teresa Thomas: Yes
Motion carried on a 5-0 vote

4. Reports from Staff Members and Committees

Policy committee Report. Mr. Norgaard gave an update of their recent meeting. The policy committee met and determined the language for the statement that is not in support of the updated health standards. The statement reads as follows:

- The McCook Public Schools Board of Education believes it is important to inform the patrons of McCook that the Board will not adopt health curriculum objectives that do not align with the community's values; therefore, no action will be taken to approve the Nebraska Department of Education's proposed health standards as currently written. It is the belief of the Board of Education that some of the standards found within the proposal are not appropriate for our students, their families, nor our community. When the Nebraska Department of Education releases their revised health standards, the McCook Board of Education will review them to see if the new version has addressed the concerns of the majority of the state, the McCook Board of Education, and the patrons of McCook Public Schools.
- McCook Public Schools reserves the right to approve or reject curriculum standards adopted by the Nebraska Department of Education.

The Policy committee also worked on the following statement published on the school website

McCook Public Schools will continue to mitigate viral and bacterial transmission in the schools moving forward by continuing to:

1. Sanitize classrooms daily.
2. Washing and sanitizing hands regularly throughout the day.
3. Sending ill students home.
4. Partnering with families to encourage good hygiene practices and to keep their children home when ill.
5. Maximizing space in classrooms and other areas where students congregate.
6. Promoting mitigation strategies such as keeping students home when sick, staying hydrated, healthy sleeping & exercise habits, and proper nutrition.
7. Using mouth coverings on students who come to school ill or have a persistent cough.

McCook Public Schools does not intend to require students to wear masks for the 2021-2022 school year. The District reserves the right to adjust our plans based on health directives as issued by the State of Nebraska.

Mr. Bredvick gave an update on the new Policy interface link that is now live. He thanked Mr. Bednar, Mrs. Heather Collicott and Mrs. Loretta Hauxwell. This is a new organization system NASBO has created.

5. Board and Administrative Comments

Career and College ready report from building principals

- Mr. Borland stated that the Elementary provides the foundation for all of their learning: reading , writing and math. They have the 1st graders write a letter to themselves as Seniors.
- Mr. Bednar discussed their career pathways, interest inventory and goal setting. They also spend a lot of time on soft skills and relating essential learnings to real life situations. They did Career on Wheels for 4th graders, and Financial literacy for 5th graders.
- Mr. Lyons reported at the Jr. High students participate in Education Quest with a report sent to the parents. Many events were cancelled due to the pandemic or weather, and hope to return to normal next school year.
- Mr. Gross and Mr. Dickes reported that Career and College Readiness is part of their daily life. It is incorporated into guidance plans and student's classes from the time they start as freshman. They offer Career Pathways, Bison Days, Education Quest Grant, National Guard Recruiters, and have a great relationship with MPCC. They also are looking to expand the Careers program into other areas besides Health and Agriculture, and will be offering Careers in Construction/Industry, Careers in Business/Finance, and Careers in Education.

Mr. Norgaard also reported on the following:

- CRT in MPS means Criterion Referenced Test
- Meeting with architect's report
3 firms, W Design, DLR, Hugley and Assoc.
 - a 4th firm would like to be involved
 - Next step: interview from the whole board
- Schedule a meeting with the architecture firm and BOE
- Principal and Administrators overall salary amount will not need to be increased for the 2021-2022 school year.
- Statement on the mitigation of Illness for 2021-2022 referenced above.

Mr. Gross provided several updates.

- June Lunch #'s = 28,637 = Avg. 478 people served daily
- *On-going Projects*

- o Roofing update: All three roof repair/replacement areas are to be completed by the time of the board meeting. (JH industrial tech wing, SH Auditorium, SH English Hallway)
- o Weiland Field project update: BSB and the city have wrapped up the project. We are finishing up with some minor sod work and concrete and capping cleanout valves of our sewer lines.
- o Central entryway and Hallways: New carpet and base has been installed and completed.
- o JH Library: New carpet and base has been installed and completed.
- o HS Health room: Trim work needs to be wrapped up, otherwise mostly complete.
- o Conference room B: Painted in anticipation of new carpet.
- o HS Mrs Janes Room: In-Progress
- o HVAC Projects: Bids to be opened Thursday, July 8th @ 2:00 pm
- o District wide surplus sale: Viewing is July 14th, sale is July 15th. McCook Learning Center and Bus barn.
- o Updated the Board on damage to several school vans and busses from a recent storm.

Board comments

- Mr. Berry would like to make sure that Auditorium upgrades are discussed with any architecture firm, and that the firm has experience with bonds.
- Mr. Hays would like to only interview the 3 firms and not add a 4th.
- Mr. Langan would like to only interview the 3 firms and not add a 4th.
- Mr. Bredvick would like to only interview the 3 firms and not add a 4th and encouraged the board to be on the lookout for NASBO school board member meetings and work to keep their calendars clear.

6. New Business

Tom Bredvick moved to approve the following statement with a second by Mike Langan.

- The McCook Public Schools Board of Education believes it is important to inform the patrons of McCook that the Board will not adopt health curriculum objectives that do not align with the community's values; therefore, no action will be taken to approve the Nebraska Department of Education's proposed health standards as currently written. It is the belief of the Board of Education that some of the standards found within the proposal are not appropriate for our students, their families, nor our community. When the Nebraska Department

of Education releases their revised health standards, the McCook Board of Education will review them to see if the new version has addressed the concerns of the majority of the state, the McCook Board of Education, and the patrons of McCook Public Schools.

- McCook Public Schools reserves the right to approve or reject curriculum standards adopted by the Nebraska Department of Education.

Dennis Berry: Yes
Tom Bredvick: Yes
Loretta Hauxwell: Absent
Brad Hays: Yes
Mike Langan: Yes
Teresa Thomas: Yes
Motion carried on a 5-0 vote

Teresa Thomas moved to approve the following School Lunch prices for the 2021-2022 school year with a second by Brad Hays.

Breakfast (reduced price is \$.30)
Elem/central = \$1.90
JH/SH = \$2.00
Adults = \$2.60
Lunch (reduced price is \$.40)
Elem = \$2.90
Central = \$3.00
JH/SH = \$3.15
Adults = \$4.05

Dennis Berry: Yes
Tom Bredvick: Yes
Loretta Hauxwell: Absent
Brad Hays: Yes
Mike Langan: Yes
Teresa Thomas: Yes
Motion carried on a 5-0 vote

Tom Bredvick moved to approve, Superintendent of Schools, Mr. Grant Norgaard salary for the 2021-2022 at \$172,300.00. Maintain his Insurance

coverages at family coverage and no other contractual changes with a second by Mike Langan.

Dennis Berry:	Yes
Tom Bredvick:	Yes
Loretta Hauxwell:	Absent
Brad Hays:	Yes
Mike Langan:	Yes
Teresa Thomas:	Yes

Motion carried on a 5-0 vote

7. Positive Comments

Mr. Hays recognized the success of several McCook junior high age groups on recent success, noting state softball and National Blue rock shooting.

Mr. Langan pointed out that he believes the school system is doing awesome and he believes we have set the standard for schools in dealing with the issues from the pandemic. He also believes that the High school career component is ready to thrive in our community.

Mr. Berry thanked Mr. Norgaard for clarifying what McCook Criterion Referenced tests are and what CRT means to our school system. He also wanted everyone to be aware of the passing of former McCook Schools Nurse, Marge Malleck. Mr. Berry stated that Mrs. Malleck was instrumental in setting up the high standards of our school health department. She was a great person and will be missed.

Mrs. Thomas gave a shout out to the MHS Bass fishing teams. She was encouraged by their dedication and success. She noted that 2 teams made it all the way to nationals.

Mr. Bredvick thanked all the school staff that volunteer for so much in our community. It is a real sense of pride to see so many teachers and staff helping so many children and families with community support.

Mr. Gross stated that Erin Ruppert, Bobbi Bortner and Heather Collicott are incredible and tireless employees. They are a great team and are making my transition so smooth. I cannot thank them enough.

Mr. Bednar thanked the maintenance department for all their summer work during the hot days.

Mr. Dickes thanked the community for all that they did to make McCook a great place. He gave special reference to the recent freedom festival and to all the McCook Schools staff and students that volunteer to pull off the great projects.

Mr. Borland thanked the custodial department for all their efforts. He gave special kudos to McCook Elementary Custodian, Justin Malleck.

Mr. Norgaard gave a positive comment about the transition in the business office to Mr. Gross. He noted his tireless work ethic and desire to learn new information everyday. He really appreciated the teamwork done by Special Education Director, John Hanson and Mr. Gross on the Special Education Service Maintenance of Effort report due with the state.

Meeting adjourned at 8:34 pm.

The next regularly scheduled board meeting is August 9th, 2021.

**CHECKS BY DATE BOARD REPORT
JULY 2021**

DATE	VENDOR	AMOUNT	DATE	VENDOR	AMOUNT
7/7/2021	Walmart	\$1,663.65	7/30/2021	D & S Hardware	\$332.74
7/7/2021	City Of McCook	\$5,002.33	7/30/2021	Decker Equipment	\$106.50
7/7/2021	Diode Communications	\$165.00	7/30/2021	Diamond Vogel	\$1,816.44
7/7/2021	Essential Screens	\$375.00	7/30/2021	Dick Blick Art Materials	\$112.26
7/7/2021	Hometown Leasing	\$2,267.83	7/30/2021	Eakes Office Solutions	\$114.99
7/7/2021	Nebraska Public Power District	\$7,590.65	7/30/2021	Electronic Systems	\$16,246.00
7/7/2021	Perry, Guthery, Haase & Gessford	\$770.46	7/30/2021	ESU #15	\$2,100.00
7/7/2021	Pinpoint Communications	\$912.06	7/30/2021	ESUCC	\$12,333.00
7/7/2021	Uncommon Schools	\$2,767.50	7/30/2021	Glass Express	\$494.30
7/7/2021	Viaero Wireless	\$69.81	7/30/2021	Harms, Sonia	\$59.50
7/13/2021	Black Hills Energy	\$454.63	7/30/2021	Houghton Mifflin Harcourt Publishing Co	\$171.65
7/13/2021	Colorado Retail Ventures	\$1,421.19	7/30/2021	Innovative Office Solutions	\$92.47
7/13/2021	Frenchman Valley Coop	\$239.86	7/30/2021	J Bar J Landfill	\$66.51
7/13/2021	Lingo Communications	\$307.59	7/30/2021	J.W. Pepper & Sons, Inc.	\$155.39
7/13/2021	Nebraska Public Power District	\$615.00	7/30/2021	JourneyEd.com, Inc	\$1,250.00
7/13/2021	US Bank	\$4,499.50	7/30/2021	K-C Motor & Electric, Inc.	\$22.50
7/15/2021	Employee Benefits:	\$37,458.05	7/30/2021	Kansas City Audio-Visual	\$1,702.95
	AFLAC	\$1,404.92	7/30/2021	Khaley Lee	\$125.00
	BCBS	\$36,053.13	7/30/2021	Kohl's Auto Parts	\$124.67
7/15/2021	Florida State Disbursement Unit	\$721.00	7/30/2021	Lara Stewart	\$125.00
7/15/2021	Krd Federal	\$150.00	7/30/2021	Linda Brewster	\$125.00
7/15/2021	NCSA	\$3,720.00	7/30/2021	McCook Clinic	\$389.10
7/20/2021	Ameritas Life Ins. Co	\$1,723.72	7/30/2021	McCook Lettering	\$10.00
7/20/2021	Employee Benefits:	\$173,784.56	7/30/2021	McCorkle Motors	\$103.46
	AFLAC	\$8,695.07	7/30/2021	Mead Lumber	\$1,815.29
	BCBS	\$161,993.64	7/30/2021	Mechanical Sales	\$474.15
	Payflex	\$3,095.85	7/30/2021	Messersmith Water Treatment	\$27.90
7/20/2021	Heritage Hills	\$479.19	7/30/2021	Michael Pochop	\$1,750.00
7/20/2021	Krd Federal	\$366.00	7/30/2021	Mid-American Research Chemical	\$958.17
7/20/2021	MASA	\$154.00	7/30/2021	Moasic @ Bethphage Village	\$3,500.28
7/20/2021	National Insurance Services	\$1,731.94	7/30/2021	National Art & School Supplies	\$1,797.47
7/20/2021	Southwest Public Schools	\$1,642.24	7/30/2021	NCS Pearson Incorporated	\$435.50
7/20/2021	Ymca	\$611.10	7/30/2021	NCSA	\$50.00
7/22/2021	Amazon.com Corporate Credit	\$2,175.94	7/30/2021	Ne Safety & Fire Equipment	\$1,435.00
7/22/2021	Great Plains Communications	\$1,100.00	7/30/2021	Nebraskaland Tire	\$87.09
7/22/2021	M&B Construction	\$6,571.26	7/30/2021	Orrs Cleaners	\$658.25
7/28/2021	M&B Construction	\$10,600.00	7/30/2021	Perma Bound	\$55.74
7/30/2021	Payflex Systems USA, Inc.	\$150.00	7/30/2021	Pine Cove Consulting	\$23,600.00
7/30/2021	20/20 Technologies, LLC	\$599.00	7/30/2021	Quality Urgent Care	\$135.00
7/30/2021	7-D Lockshop	\$117.50	7/30/2021	R & L Sprinklers	\$360.20
7/30/2021	Ace Hardware	\$21.98	7/30/2021	Rust Publishing, NE LLC	\$199.20
7/30/2021	Acme Printing Company	\$692.56	7/30/2021	School Specialty Inc	\$440.32
7/30/2021	AKRS Equipment	\$1,926.36	7/30/2021	Select Abbey Carpet & Tile, LLC	\$1,645.00
7/30/2021	Alpha Rehabilitation, P.C.	\$457.04	7/30/2021	SW NE Physical Therapy PC	\$122.50
7/30/2021	Amanda Peterson	\$125.00	7/30/2021	Sysco Lincoln	\$117.66
7/30/2021	American Electric Company	\$699.04	7/30/2021	The Home Depot Pro	\$6,222.65
7/30/2021	B2E Environmental, INC.	\$1,450.00	7/30/2021	Today's Classroom LLC	\$841.40
7/30/2021	Barb Berry	\$125.00	7/30/2021	Unitech	\$79.00
7/30/2021	Becky Redl	\$125.00	7/30/2021	US Games	\$245.16
7/30/2021	Bieker's Quality Collision Repair	\$500.00	7/30/2021	Van Diest Supply Company	\$436.20
7/30/2021	Boyz In Da Hood	\$600.00	7/30/2021	Volz Plumbing	\$880.67
7/30/2021	BSN Sports	\$760.80	7/30/2021	Wallace, Chris	\$143.36
7/30/2021	CDW Government, Inc.	\$95,849.60	7/30/2021	Zach Wieser	\$125.00
7/30/2021	D & L Pest Control	\$443.00			

Receipt History

Detail report. Sorted by Site, Receipt Date.
From 07/01/2021 to 07/31/2021.

Site	Receipt Date	Receipt #	Status / Date	Deposit #	Check #	Received From	Receipt Description	Amount	Sales Tax	Amount
Activity ID	Activity Name	Tax Name	Fee Name & Student ID	Tax Activity	Tax Rate %	Tax Amount				
MPS McCook Public Schools										
07/12/2021										
4606			CLEARED 07/31/2021	0000000571		Lifetouch	school picture commissions	261.02	0.00	261.02
541-5041	Central Elementary									
						OE-1		0.00		
4608			CLEARED 07/31/2021	0000000572		Camp Participants	Volleyball Camp	380.00	0.00	380.00
195-6001	Volleyball Fundraising									
						OE-1		0.00		
									Total for 07/12/2021	641.02
07/21/2021										
4609			CLEARED 07/31/2021	0000000584		RETURN OF CASH FOR	Surplus Sale	726.00	0.00	726.00
938-9038	Revolving Account									
						OE-1		0.00		
4612			CLEARED 07/31/2021	0000000585		Surplus Sale	Surplus Sale	44.00	0.00	44.00
938-9038	Revolving Account									
						OE-1		0.00		
									Total for 07/21/2021	770.00
07/28/2021										
4415			CLEARED 07/31/2021	0000000577		Basketball Camp	Basketball Camp	120.00	0.00	120.00
195-8001	Boys Basketball Fundraising									
						OE-1		0.00		
4417			CLEARED 07/31/2021	0000000582		R.W. Cty Court-D. Carlin	D. Carlin	77.97	0.00	77.97
531-5031	Senior High Activity									
						OE-1		0.00		
4418			CLEARED 07/31/2021	0000000583		Students	Yearbook Orders	210.00	0.00	210.00
215-2015	High School Annual									
						OE-1		0.00		
4603			CLEARED 07/31/2021	0000000575		Donations	Donation	160.00	0.00	160.00
235-2035	Cheerleaders									
						OE-1		0.00		
4607			CLEARED 07/31/2021	0000000576		Volleyball Camp fees	Volleyball Camp	60.00	0.00	60.00
195-6001	Volleyball Fundraising									
						OE-1		0.00		
4610			CLEARED 07/31/2021	0000000574		Surplus Sale	Surplus Sale	454.00	0.00	454.00
938-9038	Revolving Account									
						OE-1		0.00		
4611			CLEARED 07/31/2021	0000000573		Surplus Sale/Booe Machinery	Surplus Sale	502.30	0.00	502.30
938-9038	Revolving Account									
						OE-1		0.00		
4614			CLEARED 07/31/2021	0000000581		Burrito Fundraiser	Burrito Fundraiser	1,539.00	0.00	1,539.00
236-2036	Dance Team									
						OE-1		0.00		
4615			CLEARED 07/31/2021	0000000580		Burrito Fundraiser	Burrito Fundraiser	675.00	0.00	675.00
236-2036	Dance Team									
						OE-1		0.00		
4617			CLEARED 07/31/2021	0000000579		VB Players	Camps	320.00	0.00	320.00
195-6001	Volleyball Fundraising									
						OE-1		0.00		
4619			CLEARED 07/31/2021	0000000578		Skiles,Loop,Bremer,&White	Donation	100.00	0.00	100.00
235-2035	Cheerleaders									
						OE-1		0.00		

Receipt History

Detail report. Sorted by Site, Receipt Date.
From 07/01/2021 to 07/31/2021.

Site	Receipt Date	Receipt #	Status / Date	Deposit #	Check #	Received From	Receipt Description		
Activity ID	Activity Name	Fee Name & Student ID	Tax Name	Tax Activity	Tax Rate %	Amount	Sales Tax	Amount	
						Total for 07/28/2021		4,218.27	
07/31/2021									
7312021	CLEARED 07/31/2021	0000000586				First Central Bank	Bank Interest		
947-9047	Bank Interest					246.41	0.00	246.41	
					0E-1		0.00		
						Total for 07/31/2021		246.41	
						Site Total		5,875.70	
						Report Total		5,875.70	

Checks By Status

Sorted by Check Number.
From 07/01/2021 to 07/31/2021.

Check Number	Site ID	Status	Check / Void Date	Vendor Name	PO Number	Description	Amount
031377	MPS	Cleared	07/01/2021	General Fund	113-21	Mileage	176.40
031377	MPS	Cleared	07/01/2021	General Fund	124-21	Mileage	176.96
031378	MPS	Cleared	07/06/2021	Nicholson, Olivia	21-080734	Volleyball Camp	4,050.00
031379	MPS	Cleared	07/06/2021	Capital One	21-082247	Tennis	19.21
031379	MPS	Cleared	07/06/2021	Capital One	21-082239	Bison Day Supplies	168.39
031380	MPS	Cleared	07/06/2021	Malleck, Gene	21-082057	Memorial	25.00
031381	MPS	Cleared	07/07/2021	MCC Booster Inc	21-082058	BBB	750.00
031382	MPS	Cleared	07/07/2021	North Platte Public	21-082059	BBB	80.00
031383	MPS	Printed	07/12/2021	Korus, Gayl	21-082061	Memorial	25.00
031384	MPS	Cleared	07/13/2021	Verizon	21-082060	Internet Devices	295.97
031385	MPS	Cleared	07/13/2021	Eagle Convenience Stores	21-082063	Fuel	127.06
031386	MPS	Cleared	07/13/2021	ESU 10	21-082062	Cables & Labor	510.00
031387	MPS	Printed	07/13/2021	US Bank	21-082380	Shoes	13.90
031387	MPS	Printed	07/13/2021	US Bank	21-082385	shoes	1,071.00
031388	MPS	Cleared	07/15/2021	Cash for Concessions	21-082064	change	300.00
031389	MPS	Printed	07/28/2021	Jones School Supply Co.,	21-082257	Pins	79.00
031390	MPS	Printed	07/28/2021	McCook Lettering	21-082258	Tshirts	227.00
031390	MPS	Printed	07/28/2021	McCook Lettering	21-082065	Tshirts	331.50
031391	MPS	Printed	07/28/2021	SYNCB/Amazon	21-082083	MNB Grant	112.07
031391	MPS	Printed	07/28/2021	SYNCB/Amazon	21-082083	MNB Grant	48.92
031392	MPS	Printed	07/28/2021	Keystone Floral	21-082396	Flowers	92.02
031393	MPS	Printed	07/28/2021	WEX Bank	21-7232021	Fuel for Camp	146.09
031394	MPS	Printed	07/28/2021	Nick's Distribution Inc	21-082416	Candy	73.37
031395	MPS	Printed	07/28/2021	McCook Lettering	21-082395	Dance Tee's	374.00
Report Total:							9,272.86

McCook Public Schools

Revenues July 2021 for August Board Meeting

[Fund] 01 - General Fund						
Account Code	Description	Actual (Date	Budget (YTD)	Actual (YTD)	Available (YTD)	% of Budget
01-1-01100-00-000-000	Local Property Taxes	(\$50,407.94)	(\$7,747,000.00)	(\$6,960,285.69)	(\$786,714.31)	89.84
01-1-01115-00-000-000	Carline Taxes	\$0.00	(\$4,000.00)	(\$5,094.81)	\$1,094.81	127.37
01-1-01120-00-000-000	Public Power Dist. Sales Tax	\$0.00	(\$250,000.00)	(\$330,124.88)	\$80,124.88	132.04
01-1-01125-00-000-000	Motor Vehicle Taxes	(\$71,570.96)	(\$673,000.00)	(\$759,321.14)	\$86,321.14	112.82
01-1-01323-00-000-000	Tuition - District - Sped	\$0.00	(\$36,000.00)	(\$22,100.00)	(\$13,900.00)	61.38
01-1-01510-00-000-000	Interest	(\$650.21)	(\$50,000.00)	(\$22,206.57)	(\$27,793.43)	44.41
01-1-01911-00-000-000	Local License Fees	\$0.00	(\$7,000.00)	(\$6,790.00)	(\$210.00)	97.00
01-1-01921-00-000-000	Police Court Fines	(\$50.00)	(\$6,000.00)	(\$6,180.00)	\$180.00	103.00
01-1-01925-00-000-000	COPS Grant	\$0.00	\$0.00	(\$34,000.00)	\$34,000.00	0.00
01-1-02110-00-000-000	County Fines & License Fees	(\$3,165.26)	(\$80,000.00)	(\$49,829.38)	(\$30,170.62)	62.28
01-1-02130-00-000-000	Other County Receipts	\$0.00	\$0.00	(\$4,534.70)	\$4,534.70	0.00
01-1-02210-00-000-000	ESU Receipts	\$0.00	\$0.00	(\$342.34)	\$342.34	0.00
01-1-03110-00-000-000	State Aid	\$0.00	(\$5,860,385.00)	(\$5,860,385.00)	\$0.00	100.00
01-1-03120-00-000-000	Sped School Age	\$0.00	(\$1,100,000.00)	(\$985,555.00)	(\$114,445.00)	89.59
01-1-03125-00-000-000	Sped Trans. Sch Age	\$0.00	(\$35,000.00)	\$0.00	(\$35,000.00)	0.00
01-1-03130-00-000-000	Homestead Exemption	(\$38,992.25)	(\$180,000.00)	(\$195,021.02)	\$15,021.02	108.34
01-1-03131-00-000-000	Property Tax Credit	(\$13,013.37)	\$0.00	(\$466,031.53)	\$466,031.53	0.00
01-1-03180-00-000-000	Pro Rate Motor Vehicle	(\$6,438.29)	(\$23,500.00)	(\$27,214.26)	\$3,714.26	115.80
01-1-03400-00-000-000	State Apportionment	\$0.00	(\$335,000.00)	(\$264,806.98)	(\$70,193.02)	79.04
01-1-03512-00-000-000	Distance Educ. Incentive Payments	\$0.00	(\$2,000.00)	(\$1,929.82)	(\$70.18)	96.49
01-1-03535-00-000-000	High Ability Learner Payments	\$0.00	(\$11,325.00)	(\$9,950.00)	(\$1,375.00)	87.85
01-1-03990-00-000-000	Other State Receipts	\$0.00	(\$15,000.00)	\$0.00	(\$15,000.00)	0.00
01-1-04505-00-000-000	Title I Current Fiscal Year	\$0.00	(\$240,000.00)	(\$208,129.00)	(\$31,871.00)	86.72
01-1-04506-00-000-000	Title I Needs Improvement	\$0.00	(\$12,000.00)	\$0.00	(\$12,000.00)	0.00
01-1-04509-00-000-000	Title II, Part A Teacher Quality	\$0.00	(\$40,000.00)	(\$15,645.00)	(\$24,355.00)	39.11
01-1-04510-00-000-000	Title IV	\$0.00	(\$63,000.00)	\$0.00	(\$63,000.00)	0.00
01-1-04512-00-000-000	Federal Services - IDEA Part B (611) Base	\$0.00	(\$350,098.00)	\$0.00	(\$350,098.00)	0.00
01-1-04516-00-000-000	IDEA Base 3-5	(\$7,447.00)	(\$15,738.00)	(\$23,333.00)	\$7,595.00	148.25
01-1-04518-00-000-000	IDEA - BASE - EP	(\$109,002.00)	\$0.00	(\$499,108.00)	\$499,108.00	0.00
01-1-04521-00-000-000	IDEA Non-Public	(\$9,962.00)	(\$29,414.00)	(\$37,864.00)	\$8,450.00	128.72
01-1-04524-00-000-000	Other Federal Non-categorical	\$0.00	(\$13,200.00)	(\$338.08)	(\$12,861.92)	2.56
01-1-04525-00-000-000	Federal Carl Perkins	\$0.00	(\$2,000.00)	\$0.00	(\$2,000.00)	0.00
01-1-04530-00-000-000	Categorical Grants	\$0.00	(\$3,000.00)	(\$4,408.00)	\$1,408.00	146.93
01-1-04708-00-000-000	Medicaid In Public Schools	\$0.00	(\$5,000.00)	(\$36,352.26)	\$31,352.26	727.04
01-1-04709-00-000-000	Medicaid Administrative Activity	\$0.00	(\$1,000.00)	(\$7,132.06)	\$6,132.06	713.20
01-1-04996-00-000-000	ESSER- CARES ACT	\$0.00	\$0.00	(\$169,284.00)	\$169,284.00	0.00
01-1-05301-00-000-000	Insurance Adjustments	\$0.00	\$0.00	(\$6,768.30)	\$6,768.30	0.00
Sub Total		(\$310,699.28)	(\$17,189,660.00)	(\$17,020,064.82)	(\$169,595.18)	99.01

[Fund] 02 - Depreciation						
Account Code	Description	Actual (Date	Budget (YTD)	Actual (YTD)	Available (YTD)	% of Budget
02-1-01510-00-000-000	Interest	\$0.00	(\$1,500.00)	(\$5,359.79)	\$3,859.79	357.31
02-1-05200-00-000-000	Transfers From General Fund	\$0.00	(\$130,000.00)	\$0.00	(\$130,000.00)	0.00
02-1-05690-00-000-000	Non-revenue Receipts	(\$353.36)	\$0.00	(\$9,390.04)	\$9,390.04	0.00
Sub total		(\$353.36)	(\$131,500.00)	(\$14,749.83)	(\$116,750.17)	11.22
[Fund] 03 - Employee						
Account Code	Description	Actual (Date	Budget (YTD)	Actual (YTD)	Available (YTD)	% of Budget
03-1-01510-00-000-000	Interest - Unemployment	\$0.00	(\$250.00)	(\$178.15)	(\$71.85)	71.26
03-1-05200-00-000-000	Transfers From General Fund	\$0.00	(\$5,000.00)	\$0.00	(\$5,000.00)	0.00
Sub total		\$0.00	(\$5,250.00)	(\$178.15)	(\$5,071.85)	3.39
[Fund] 06 - School Nutrition Fund						
Account Code	Description	Actual (Date	Budget (YTD)	Actual (YTD)	Available (YTD)	% of Budget
06-1-01510-00-000-000	Interest	(\$14.25)	(\$100.00)	(\$130.45)	\$30.45	130.45
06-1-01611-00-000-000	School Lunch Program	(\$67.25)	(\$310,000.00)	(\$237,098.26)	(\$72,901.74)	76.48
06-1-01920-00-000-000	OTHER CONTRIBUTIONS AND DONATIONS	\$0.00	\$0.00	(\$2,000.00)	\$2,000.00	0.00
06-1-03150-00-000-000	State Reimbursement	\$0.00	(\$320,000.00)	\$0.00	(\$320,000.00)	0.00
06-1-04210-00-000-000	Federal Reimbursement	(\$97,540.40)	\$0.00	(\$641,800.85)	\$641,800.85	0.00
06-1-05690-00-000-000	Other Non-revenue Receipts	\$2.45	\$0.00	(\$187.99)	\$187.99	0.00
Sub total		(\$97,619.45)	(\$630,100.00)	(\$881,217.55)	\$251,117.55	139.85
[Fund] 07 - Bond Fund						
Account Code	Description	Actual (Date	Budget (YTD)	Actual (YTD)	Available (YTD)	% of Budget
07-1-01100-00-000-000	Local Property Taxes	(\$3,844.50)	(\$410,000.00)	(\$369,940.28)	(\$40,059.72)	90.22
07-1-01115-00-000-000	Carline Taxes	\$0.00	(\$385.00)	(\$354.51)	(\$30.49)	92.08
07-1-01120-00-000-000	Public Power Dist. Sales Tax	\$0.00	(\$245.00)	(\$22,959.51)	\$22,714.51	9,371.22
07-1-01510-00-000-000	Interest	\$0.00	(\$570.00)	(\$724.31)	\$154.31	127.07
07-1-03130-00-000-000	Homestead Exemption	(\$2,506.12)	(\$8,600.00)	(\$12,534.77)	\$3,934.77	145.75
07-1-03131-00-000-000	Property Tax Credit	\$0.00	\$0.00	(\$22,378.35)	\$22,378.35	0.00
07-1-03180-00-000-000	Pro Rate Motor Vehicle	(\$355.44)	(\$1,200.00)	(\$1,469.53)	\$269.53	122.46
07-1-05101-00-000-000	Issuance of Bonds(Refunding Only)	\$0.00	\$0.00	(\$914.94)	\$914.94	0.00
Sub total		(\$6,706.06)	(\$421,000.00)	(\$431,276.20)	\$10,276.20	102.44
[Fund] 08 - Special						
Account Code	Description	Actual (Date	Budget (YTD)	Actual (YTD)	Available (YTD)	% of Budget
08-1-01100-00-000-000	Local Property Taxes	(\$2,781.78)	(\$430,000.00)	(\$263,707.50)	(\$166,292.50)	61.32
08-1-01115-00-000-000	Carline Taxes	\$0.00	(\$150.00)	(\$251.20)	\$101.20	167.46
08-1-01120-00-000-000	Public Power Sales Tax	\$0.00	(\$1,000.00)	(\$15,902.11)	\$14,902.11	1,590.21
08-1-01510-00-000-000	Interest	\$0.00	(\$1,000.00)	(\$2,303.20)	\$1,303.20	230.32
08-1-01960-00-000-000	Other Local Receipts	\$0.00	\$0.00	(\$100,000.00)	\$100,000.00	0.00
08-1-03130-00-000-000	Homestead Exemption	(\$2,164.26)	(\$1,100.00)	(\$8,674.61)	\$7,574.61	788.60
08-1-03131-00-000-000	Property Tax Credit	(\$722.31)	\$0.00	(\$14,542.31)	\$14,542.31	0.00
08-1-03180-00-000-000	Pro-rate Motor Vehicle	(\$357.36)	(\$1,750.00)	(\$1,107.65)	(\$642.35)	63.29
Sub total		(\$6,025.71)	(\$435,000.00)	(\$406,488.58)	(\$28,511.42)	93.45
Grand Total		(\$421,403.86)	(\$18,812,510.00)	(\$18,753,975.13)	(\$58,534.87)	99.69

McCook Public Schools

Expenditures for July 2021 for August 2021 Board Meeting

Function	Actuals (Selected)	Adopted Budget	Actuals (YTD)	Available	% of Budget
01100 - Regular Instruction	\$468,559.31	\$6,047,672.00	\$5,421,546.20	\$626,125.80	89.65
01125 - Regular Instructional Programs School Age (Flex-Spending)	\$8,024.34	\$137,390.00	\$126,137.32	\$11,252.68	91.81
01150 - Limited English Proficiency Programs	\$12,939.65	\$118,100.00	\$186,831.92	(\$68,731.92)	158.20
01160 - Poverty Programs	\$106,153.85	\$1,845,300.00	\$1,231,112.01	\$614,187.99	66.72
01190 - Early Childhood Educational Programs	\$0.00	\$2,500.00	\$1,014.88	\$1,485.12	40.60
01200 - Special Education Instructional Programs - School Age	\$122,087.90	\$2,079,250.00	\$1,948,611.97	\$130,638.03	93.72
01291 - Special Education Instructional Programs - Ages 3-5	\$0.00	\$0.00	\$411.94	(\$411.94)	
01295 - Special Education Instructional Programs - Unified Sports	\$89.11		\$978.54	(\$978.54)	
01300 - Summer School	\$53,159.07	\$49,950.00	\$55,860.86	(\$5,910.86)	111.83
02110 - Attendance/Social Work	\$0.00	\$35,000.00	\$18,318.60	\$16,681.40	52.34
02120 - Guidance Services	\$17,334.84	\$239,808.00	\$196,613.32	\$43,194.68	81.99
02130 - Health Services	\$0.00	\$55,600.00	\$3,219.51	\$52,380.49	5.79
02131 - SPED Health Services	\$568.26		\$37,794.52	(\$37,794.52)	
02141 - Psychological Services - SPED - School Age	\$11,418.76	\$125,580.00	\$124,434.01	\$1,145.99	99.09
02151 - Speech Pathology and Audiology Services - SPED - School Age	\$16,212.44	\$217,900.00	\$178,586.36	\$39,313.64	81.96
02152 - Speech Pathology and Audiology Services - SPED - Age 3-5	\$29.87	\$2,950.00	\$489.79	\$2,460.21	16.60
02153 - Speech Pathology and Audiology Services - SPED - Age 0-2	\$0.00	\$1,000.00	\$0.00	\$1,000.00	0.00
02161 - Occupational Therapy-Related Services - SPED - School Age	\$6,888.19	\$86,200.00	\$94,284.06	(\$8,084.06)	109.38
02162 - Occupational Therapy-Related Services - SPED - Ages 3-5	\$0.00		\$39.89	(\$39.89)	
02171 - Physical Therapy-Related Services - SPED - School Age	\$0.00		\$19,178.84	(\$19,178.84)	
02172 - Physical Therapy-Related Services - SPED - Ages 3-5	\$0.00		\$1,004.51	(\$1,004.51)	
02173 - Physical Therapy-Related Services - SPED - Ages 0-2	\$122.50		\$689.50	(\$689.50)	
02181 - Visually Impaired-Vision Services - SPED - School Age	\$0.00	\$7,500.00	\$13,326.08	(\$5,826.08)	177.68
02190 - Support Services - Student - Other	\$0.00	\$100,000.00	\$100,732.86	(\$732.86)	100.73
02213 - Instructional Staff Training	\$0.00	\$4,500.00	\$0.00	\$4,500.00	0.00
02220 - Library-Media Services	\$26,166.37	\$371,545.00	\$332,246.28	\$39,298.72	89.42
02230 - Instruction Related Technology	\$0.00	\$25,000.00	\$23,000.00	\$2,000.00	92.00
02310 - Board of Education	\$209.20	\$231,500.00	\$26,739.08	\$204,760.92	11.55
02320 - Executive Administration	\$19,635.77	\$246,650.00	\$205,337.69	\$41,312.31	83.25
02330 - District Legal Services	\$770.46		\$6,298.43	(\$6,298.43)	
02410 - Office of the Principal	\$59,525.80	\$1,146,880.00	\$886,133.30	\$260,746.70	77.26
02490 - Activity Director	\$10,199.29	\$105,600.00	\$112,838.09	(\$7,238.09)	106.85
02510 - Fiscal Services	\$35,334.25	\$633,550.00	\$537,571.55	\$95,978.45	84.85
02580 - Administrative Technology Service	\$24,294.59	\$256,300.00	\$175,164.85	\$81,135.15	68.34
02610 - Operation of Buildings	\$43,014.01	\$836,600.00	\$628,489.68	\$208,110.32	75.12
02620 - Maintenance of Buildings	\$80,201.10	\$669,825.00	\$603,771.94	\$66,053.06	90.14
02650 - Vehicle Operation and Maintenance (Other Than Student)	\$1,211.01	\$21,500.00	\$6,578.78	\$14,921.22	30.60
02660 - Security	\$0.00	\$46,000.00	\$34,000.00	\$12,000.00	73.91
02670 - Safety	\$165.00		\$1,815.00	(\$1,815.00)	
02710 - Vehicle Operation - Regular Education	\$2,534.65	\$298,200.00	\$212,124.21	\$86,075.79	71.13
02712 - Vehicle Operation - School Age SPED	\$1,269.74	\$60,100.00	\$28,520.96	\$31,579.04	47.46
02713 - Vehicle Operation - Below Age 5 SPED	\$0.00	\$15,900.00	\$0.00	\$15,900.00	0.00
02730 - Vehicle Servicing and Maintenance - Regular Education	\$5,646.49	\$53,400.00	\$61,712.47	(\$8,312.47)	115.57
03500 - Other State Categorical Programs	\$0.00		\$176.98	(\$176.98)	
03535 - High Ability Learners	\$0.00	\$25,000.00	\$9,879.83	\$15,120.17	39.52
03599 - State Categorical Programs - Others	\$0.00	\$7,500.00	\$0.00	\$7,500.00	0.00
06200 - Federal Services - Title I Part A ESSA Improving Basic Programs	\$18,420.24	\$238,100.00	\$203,560.19	\$34,539.81	85.49

06210 - Federal Services - Title I Part A Accountability ESSA Improving Basic	\$0.00	\$4,200.00	\$0.00	\$4,200.00	0.00
06310 - Federal Services - Title II Part A ESSA Supporting Effective Instruction	\$6,469.13	\$62,000.00	\$40,102.17	\$21,897.83	64.68
06406 - Federal Services - IDEA Preschool (619) Base Allocation	\$0.00	\$17,740.00	\$16,440.00	\$1,300.00	92.67
06408 - Part B 611 Base EP	\$31,030.71	\$355,700.00	\$323,092.97	\$32,607.03	90.83
06412 - Federal Services - IDEA Part B Proportionate Share	\$4,307.51	\$31,900.00	\$29,550.16	\$2,349.84	92.63
06690 - Federal Services - Other Federal Non-Categorical Expenditures	\$0.00	\$7,070.00	\$0.00	\$7,070.00	0.00
06700 - Federal Services - Federal Vocational and Applied Technology	\$0.00	\$2,000.00	\$0.00	\$2,000.00	0.00
06967 - FEDERAL SERVICES - TITLE IV, PART A ESSA: STUDENT	\$0.00	\$63,000.00	\$0.00	\$63,000.00	0.00
06969 - Title IV	\$0.00		\$16,197.11	(\$16,197.11)	
06996 - ESSER Disbursements	\$8,932.98		\$33,672.35	(\$33,672.35)	
06997 - ESSER2 Disbursement	\$198,900.98		\$387,527.76	(\$387,527.76)	
06998 - ESSER3 Disbursement	\$0.00		\$117,011.03	(\$117,011.03)	
08000 - Transfers (Outgoing)	\$0.00	\$200,000.00	\$82,000.00	\$118,000.00	41.00
Subtotal of Element: [Fund] 01 - General Fund	\$1,401,827.37	\$17,188,960.00	\$14,902,770.35	\$2,286,189.65	87%
02190 - Support Services - Student - Other	\$114,972.30	\$630,100.00	\$846,817.83	(\$216,717.83)	134.39
Subtotal of Element: [Fund] 06 - School Nutrition Fund	\$114,972.30	\$630,100.00	\$846,817.83	(\$216,717.83)	135%
02515 - Building and Sites	\$0.00	\$240,000.00	\$0.00	\$240,000.00	0.00
05000 - Debt Service	\$3,007.54	\$55,000.00	\$18,045.24	\$36,954.76	32.81
Subtotal of Element: [Fund] 08 - Special Building Fund	\$3,007.54	\$295,000.00	\$18,045.24	\$276,954.76	6%
02520 - Purchasing Warehousing and Distributing Services	\$219,418.88		\$704,367.90	(\$704,367.90)	
02900 - Unemployment Compensation	\$0.00	\$410,000.00	\$0.00	\$410,000.00	0.00
Subtotal of Element: [Fund] 02 - Depreciation Fund	\$219,418.88	\$410,000.00	\$704,367.90	(\$294,367.90)	
02520 - Purchasing Warehousing and Distributing Services	\$0.00	\$5,250.00	\$0.00	\$5,250.00	0.00
02900 - Unemployment Compensation	\$0.00		\$3,118.59	(\$3,118.59)	
Subtotal of Element: [Fund] 03 - Employee Benefit Fund	\$0.00	\$5,250.00	\$3,118.59	\$2,131.41	60%
05000 - Debt Service	\$0.00	\$421,000.00	\$411,840.90	\$9,159.10	97.82
Subtotal of Element: [Fund] 07 - Bond Fund	\$0.00	\$421,000.00	\$411,840.90	\$9,159.10	98%
Grand Total	\$1,739,226.09	\$18,950,310.00	\$16,886,960.81	\$2,063,349.19	89%

McCook Public Schools

Cash Summary Report June 2021 for July 2021 Board Meeting

Fund	Description	Beginning Balance	Revenue	Expenditure	Ending Balance	Encumbrances	Available
01	General Fund	\$7,011,883.16	\$310,699.28	(\$1,401,827.37)	\$5,920,755.07	(\$171,916.75)	\$5,748,838.32
02	Depreciation Fund	\$1,106,762.49	\$353.36	(\$219,418.88)	\$887,696.97	(\$3,837.42)	\$883,859.55
03	Employee Benefit Fund	\$133,948.33	\$0.00	\$0.00	\$133,948.33	\$0.00	\$133,948.33
06	School Nutrition Fund	\$194,633.90	\$97,619.45	(\$114,972.30)	\$177,281.05	(\$35,777.53)	\$141,503.52
07	Bond Fund	\$602,848.91	\$6,706.06	\$0.00	\$609,554.97	\$0.00	\$609,554.97
08	Special Building Fund	\$792,929.08	\$6,025.71	(\$3,007.54)	\$795,947.25	\$0.00	\$795,947.25
Sub Total		\$9,843,005.87	\$421,403.86	(\$1,739,226.09)	\$8,525,183.64	(\$211,531.70)	\$8,313,651.94

Fund	Description	Beginning Balance	Revenue	Expenditure	Ending Balance
12	Activity Fund	\$338,946.37	\$5,875.70	(9272.86)	\$335,549.21

McCook Public Schools

Voucher by Vendor Report

US Bank Visa Card

July 2021

Voucher Number	Vendor	Amount					
JUL 02	US Bank	\$4,499.50					
Invoice	Payment Vendor	PO Number	Invoice Date	Warrant Number	Item Description	Account Code	Amount
EBAY-Screenflex	US Bank	21-9872	05/26/2021	52016	Screenflex 6ft Tall 3-13 Panels Portable Folding Partitions Wall--Ron Wolf's classroom.	01-2-01200-45-610-2-002-70	\$839.95
Emb Suites/Linc	US Bank	21-1436	06/17/2021	52016	2 nights at Embassy Suites for Conley Straight Trial --Jeff Gross	01-2-02410-00-580-2-001-15	\$192.00
Embassy Suites/Lin	US Bank	115-21L	06/17/2021	52016	Embassy Suites room for Conley Straight Trial for Craig Dickes	01-2-02410-00-580-2-001-15	\$105.60
PayPal*Sprinkl	US Bank	21-1438	06/02/2021	52016	Sprinkler Warehouse 2 wifi modulators and controllers	01-2-02620-00-610-0-000-12	\$487.60
Hyatt Regency/Phoenix	US Bank	21-1439	06/12/2021	52016	Rooms at Hyatt Regency Phoenix for Solution Tree PLC Conf	01-2-06310-00-580-0-000-90	\$2,826.63
Learn WO Tears	US Bank	21-9982	06/12/2021	52016	Supplies for Summer School for Tracy Flaska	01-2-06997-00-610-0-000-11	\$47.72
Grand Total							\$4,499.50

Facilities Committee Meeting 7-27-2021

12:00 pm **Conference Room A**

Current issues or on the horizon:

- JH HVAC Project
 - [LINK LINK LINK](#)

	Snell Services Inc. P.O. Box 629 North Platte, NE 69103 308-532-6874	* Controls Contract Rasmussen Gibbon Office 402-250-5799	W Design Fees
		Modify DDC Controls: \$45,336.00	Design Fee : \$103,888.00
Base Bid	\$972,500.00	\$16,481.00	Construction Fee: \$17,032.50

- SH/JH HVAC Front end System
 - [LINK](#)
- Vehicle Fleet Damages from Storm
 -
- Depreciation items
- Carpet in common areas at Central



- Central needs new carpet in the office space and several classrooms, so we will plan on those upgrades for the summer of 2022.
- High School updates
 - One classroom is currently coming to completion at the high school

- Two classrooms will be left at the high school to work on following the summer
 - These two rooms might be completed during this school year
 - 1 Business classroom and 1 resource classroom
- Summer of 2022
 - Complete and unfinished classrooms
 - Drama classroom needs to be addressed
 - Possibly start work on the Superintendent's office area
 - This might be a multistage project
- Future updates
 - Hallways
 - Drop ceiling, drywall, and either new lockers or find a crew to paint the lockers we have.
 - Central has locker issues as well
- Track resurface summer of 2022
 - We plan on working with W-Design on this project to make sure it is done right
 - We believe we will get more quality years out of the track surface if it is done correctly
- Parking lots summer of 2022
 - Another project we would like to partner with W-Design on to make sure it is done correctly
- Roof replacement cont. Summer of 2022
- High School entry point illumination

Down the road:

- Jr. High Bleachers
 - The time is coming when these should be replaced
- Jr. High gym floor sanding
 - The floor is orange and sanding it down will improve the surface color.
- Concrete work around the District
 - We have a lot of concrete issues across the District and we are going to put together a concrete plan for addressing them
 - We will prioritize areas based on need and work through the projects over time.

- New boilers for the McCook Learning Center (Old Armory)
- Playground updates

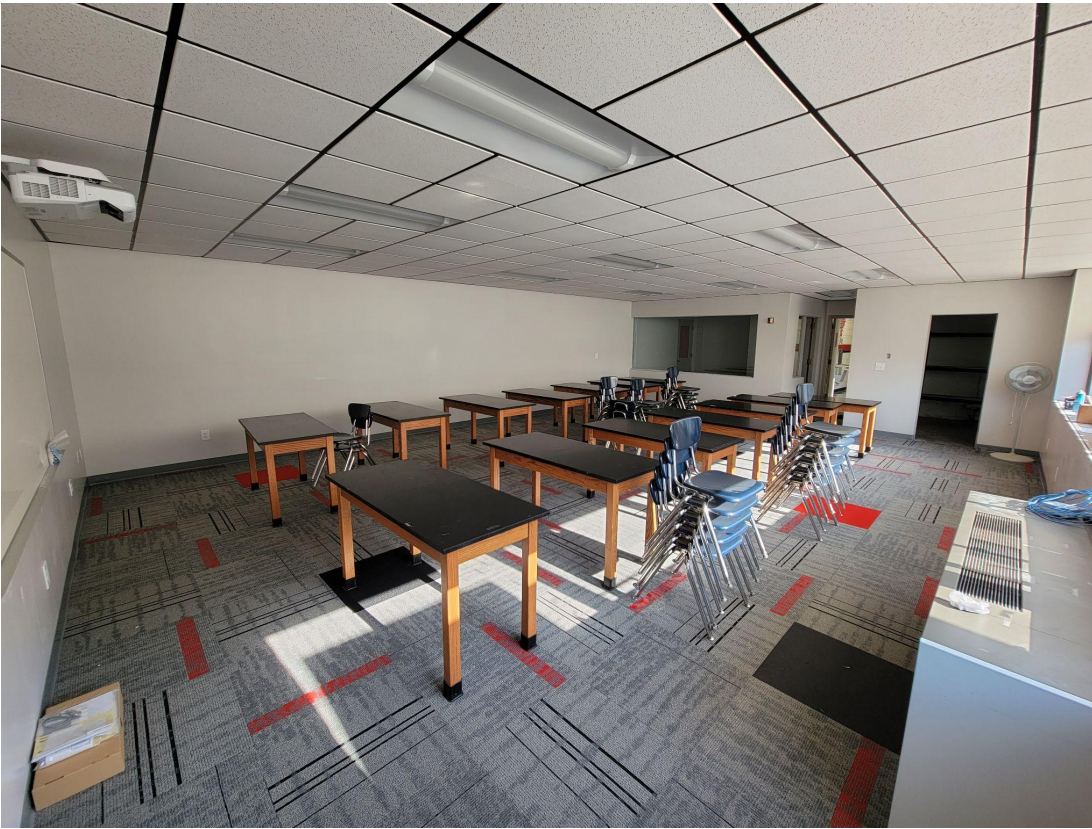
Things to be aware of:

- Route Bus purchase 2021-2022
- Vehicle fleet upgrade
 - Vans and pickups
- Multipurpose mower/snow mover purchase 2022-2023
 - This will be one of those more expensive mowers approx. \$40,000-\$45,000

Mrs. Janes Business Classroom



Mr. May's old classroom - Future Health Classroom



Resource Classroom to be completed during the 2021-2022 school year.



Monthly Business Manager Board of Education Report

August 2021

June Lunch #'s = 17,234 = Avg. 278 people served daily

Projects - Updates

Roofing update: All three roof repair/replacement areas are completed.

Weiland Field project update: Completed

Central entryway and Hallways: Completed.

JH Library: Completed.

HS Health room: Trim work needs to be completed.

Conference room B: Painted in anticipation of new carpet.

HS Mrs Janes Room: Trim work needs to be completed

HVAC Projects: Bids were opened and to be discussed at the BOE meeting.

Upcoming Projects

Wrap up ongoing projects and finish prep for schools to open

Federal/state Reports filed in July:

Summer School attendance

Superintendent. transparency act

Essers - 2 Application and approval

Essers - 3 Application and approval

McCook School Board Report
August 9, 2021
Special Education Dept., John Hanson, Director

- 1) NDE is changing the age that we start “transitioning” students with disabilities to adult services from 16 to 14. This matches the federal IDEA language. This also means that our junior high special education teachers will need to do an extra page on their student’s annual IEPs. Training will be provided around this topic early in the school year for junior and senior high school special educators.
- 2) We have hired Molly Smith as a paraprofessional at McCook Junior High School to replace Rae Springer who resigned at the end of last year. We also hired Jenna Morgan as a 1:1 paraprofessional at McCook Elementary for a student who recently moved in that has some significant needs and will be in our DLC program.
- 3) We’ve got a great group of new teachers this year...a number of Bison graduates. Some with teaching experience and some without, which is great to get new blood/talent into the amazing school system that we have here in McCook. I had the opportunity to spend a morning with them last week teaching them some basic classroom management strategies and behavior de-escalation techniques.
- 4) I’ve had about 5 paraprofessionals who do not meet the “highly qualified” status come in this summer and pass the assessment to make them “highly qualified” as required by NDE and the federal government. We’ve still got about 5 more to go until all paraprofessional staff is considered “highly qualified.”
- 5) Thank you to Mr. Paul Calvert, ESU 15 Administrator, who spoke about what the ESU offers for area schools, to the McCook Rotary Club back in June.

McCook Elementary Board Report August 2021

1. Enrollment:

PreK 3-Year-Olds	15
Prek 4-Year-Olds	15
Kindergarten	87
1st Grade	90
2nd Grade	74
3rd Grade	97
Total	378



2. Curriculum/Instruction

- a. Teachers are working on completing their rooms and getting together.
- b. CRT training took place last week.
- c. Many staff have taken advantage of completing their trainings early.
- d. We are excited to welcome 3 new teachers to our school this year.
 - i. Rachelle Kotschwar: DLC
 - ii. Tatum Radel: 3rd Grade
 - iii. Lori Barger: 1st Grade

3. General Announcements

- a. Thank you Justin for getting our building prepared for the school year.
- b. Thank you to the painting crew as well for making our building and grounds look nice for the beginning of the year.
- c. Walk To School Night for grades 1st through 3rd is scheduled for 16th at 5:00 to 6:00
- d. Kindergarten Walk to School Night is scheduled for 23rd at 5:00-6:00
- e. The final students that were homeschooled for the 20-21 school year due to COVID concerns have reentered our enrollment for the 21-22 school year.

4. PTO News:

- a. Will be providing popsicles to families on their Walk to School Nights.

Junior High Board Report
July 30, 2021
Chad Lyons, Principal

1. Mr. Lyons and office staff continued updating and organizing our staffs' first-day packet.
2. Mr. Norgaard led the discussion with three different architecture firms that toured the junior building for remodeling or new structure proposals.
3. Office staff processed new students registering for the upcoming school year.
4. Paraprofessional interviews were conducted for our opening.
5. Mr. Norgaard led the discussion with three different architecture firms that toured the junior building for remodeling or new structure proposals.
6. NCSA hosted Administrator Days in Kearney.
7. Enrollment = 6th- 106, 7th-95, 8th-118

August 9th, 2021

SH Board Report

Senior High, Craig Dickes, Principal

2021-2022 Enrollment numbers as of 8-4: (These will change)

9th -99, 10th -101, 11th - 123, 12th - 128. Total = 451

High School Registration days are August 9th- 13th, from 7:00-2:00 and 4:00-7:00

Seniors August 9th

Juniors August 10th

Sophomores August 11th

Freshmen August 12th

Those not able to attend previously August 13th

Important Dates:

Open House August 24th, 7:00-8:00

Homecoming Dance Sept 11th

Color Day January 8th

Bison Days February 14-15

ACT March 22nd

Pre-ACT March 23rd

Prom April 9th

Graduation May 13th

Ms. Scheil's room is nearly finished, as is Mrs. Janes. Mrs. Fisher's tables are installed. Custodial staff are going through the building one more time before school starts making sure it is clean.

Freshmen will be in attendance Tuesday, August 17th, everyone else will start on August 18th.

504.20 - ELEMENTARY AND SECONDARY: ACTIVITIES CONDUCT

BULLYING PREVENTION

McCook Public Schools believes that physically safe and emotionally secure environments should be provided for all students and staff. It is the goal of the McCook Public Schools through this policy to create such positive learning and teaching environments.

For purposes of this policy, the definitions are:

- 1) **Bullying:** When a person(s) intentionally and repeatedly directs physical, verbal, social, and/or psychological aggression or harassment toward others, with the goal of gaining power or dominating another individual which interrupts or disrupts the educational environment regardless of where it occurs.
- 2) **Internet Aggression (Cyber bullying):** The willful use of computers and electronic communication devices as tools to intentionally and repeatedly cause harm or discomfort through verbal or relational aggression that targets a specific person or group of persons and interrupts or disrupts the educational environment regardless of where it occurs.

Bullying and cyber bullying of students, staff, or visitors by other students will not be tolerated in the school district. The district will promptly and reasonably investigate allegations of bullying and cyber bullying. The building principal will be responsible for handling all complaints of bullying and cyber bullying.

It shall also be the responsibility of the superintendent to develop administrative rules regarding this policy. These rules will be printed and distributed to students and parents in the student handbook.

This policy shall be reviewed annually.

Approved 8/13/2018 Revised _____ Reviewed _____

2018-19 SpEd Option Enrollment Resolution

Option Enrollment Resolution - 2021-2022					
SCHOOL	LEVEL	PROGRAM	CURRENT ENROLLMENT	CAPACITY	# OF OPTION AVAILABLE
Sr. High	I & II	Nichols	13	14	1
Sr. High	I & II	Vetrovsky	15	14	0
Sr. High	I & II	Carpenter	12	14	2
Sr. High	II & III	Kinne	9	8	0
Jr. High	I & II	Peterman	11	14	3
Jr. High	I & II	Jones	10	14	4
Jr. High	I, II & III	Wolf	10	5	0
Jr. High	I & II	Wordekemper	6	5	0
Central	I & II	Hoins	13	10	0
Central	I & II	Egle	10	10	0
McCook Elementary	I, II & III	White	4	4	0
McCook Elementary	I & II	Flaska	15	14	0
McCook Elementary	I & II	Tiller	10	14	4
DLC	II & III	Kotschwar	7	6	0
Speech-gr. 4-12	I & II	Juenemann	29	24	0
Speech-McElem	I & II	Fordham	37	28	0
Speech-ECSE/Nonpublic	I & II	Uerling	8	24	14
ECSE**	I	Holthus	5	8	2
*Full does not mean closed. Enrollments fluctuate up and down frequently.					
Programs designated as "full" can be reviewed at any time.					
See Below-Speech therapy services are combined with resource language services frequently resulting in duplicated counts, monitoring of progress only, etc.					
Accordingly, speech therapy/language services can be reviewed at any time.					
**This is preschool. The maximum capacity is 17 students in the AM class and 17 students in the PM class. According to Nebraska Rule 11 criteria, there cannot be more students with disabilities					

2018-19 SpEd Option Enrollment Resolution

		than students without disabilities.		
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(2017-2018 OPTION ENROLLMENT RESOLUTION) Appendix "I"

BE IT RESOLVED by the School Board and Board of Education of this School District that the maximum number of option students that this School District will accept for the **2017-2018** school year in any program, class, grade level, or school building or in any special education programs operated by this School District, based upon available staff, facilities, projected enrollment or resident students, projected number of students with which this School District will contract based on existing contractual arrangements, and availability of appropriate special education programs, is as follows:

Junior/Senior High School Attendance Center:

PROGRAM	PROGRAM CAPACITY	PROJECTED ENROLLMENT	# OF OPTION STUDENTS
Senior High			
9th Grade	150	110	40
10th Grade	150	125	25
11th Grade	150	130	20
12th Grade	150	110	40
Junior High			
6th Grade	140	105	35
7th Grade	140	110	30
8th Grade	140	95	45
Total Building Capacity	600 SH 420 JH	475 SH 310 JH	125 SH 110 JH
Sp Education Programs/Dist.			
A. Level I & II	*See Individual Program List Attached		
B. Level III	*See Individual Program List Attached		

Elementary Attendance Center:

PROGRAM	PROGRAM CAPACITY	PROJECTED ENROLLMENT	# OF OPTION STUDENTS
Elementary			
Kindergarten	120	105	15
1st Grade	120	110	10
2nd Grade	120	105	15
3rd Grade	120	100	20
Central Elem			
4th Grade	120	85	35
5th Grade	120	110	10
Total Building Capacity	480 K-3 240 4-5	420 K-3 195 4-5	60 K-3 45 4-5
Special Education Programs/District			
A. Level I & II	*See Individual Program List Attached		
B. Level III	*See Individual Program List Attached		

The attached Resolutions having been read in their entirety, member _____
Moved for their passage and adoption, and member _____ seconded the same.

After discussion and on roll call vote, the following members voted in favor of passage and adoption of the
above Resolutions:

The following members voted against the same:

The following members were absent or not voting:

The above Resolution, having been consented to and approved by more than a majority of the members of the
School Board of this School District, was declared as passed and adopted by the President at a duly held and lawfully
convened meeting in full compliance with the Nebraska open meetings law.

Dated this _____ day of _____, 2017

RED WILLOW COUNTY SCHOOL
DISTRICT 73-0017, a/k/a MCCOOK
PUBLIC SCHOOLS

By:

President

Attest:

Secretary

August 14, 2017

2017-2018 Special Education Enrollment - Option Student Availability

SCHOOL	LEVEL	PROGRAM	CURRENT ENROLLMENT	CAPACITY	# OF OPTION / AVAILABLE
Sr High	I & II	Carpenter	15	14	None
Sr High	I & II	Nichols	12	14	2
LIFT	I & II	Egle	4	6	2
Sr High	I & II	Vetrovsky	14	14	0
Jr High	I & II	Peterman	10	14	4
Jr High	I, II & III	Shiers	7	5	None
Jr High	I & II	Jones	11	14	3
Jr High	I & II	Wordekemper	7	7	None
Nonpublics	I & II	Nokes	8	7	None
Central	I & II	Boehm	11	10	None
Central	I & II	Burton	13	10	None
McCook Elem	I, II & III	Jensen	2	5	3
McCook Elem	I & II	Flaska	11	14	3
McCook Elem	I & II	Tiller	8	14	6
McElem DLC	II & III	Reisig	6	6	None
Sr High DLC	II & III	Kinne	12	10	None
Sp. Ther.	I & II	Jimenez	21	24	3
Sp. Ther.	I & II	Karnopp	19	28	9
Sp. Ther.	I & II	Powers	12	24	12
Preschool**	I	Hofthus	6	8	2

* Full does not mean closed. Enrollments fluctuate up and down frequently. Programs designated as "Full" can be reviewed at any time.

See Below - Speech therapy services are combined with resource language services frequently resulting in duplicated counts, monitoring of progress only, etc. Accordingly, speech therapy/language services can be reviewed at any time.

** This is preschool. The maximum capacity is 17 students in the AM class and 17 students in the PM class. According to Nebraska Rule 11 criteria, there cannot be more students with disabilities than students without disabilities. Bison Preschool will accept option enrollment preschool students if there is less than 8 special education preschool students and less than 17 total students in the AM or PM class.

504.19 - STUDENT FEES

The board realizes some activities may require additional expenditures which are property to be borne by students as a separate charge. Such charges may be waived as specified below depending upon the student's eligibility for free and reduced-price lunch program. No fees, specialized or non-specialized attire or equipment shall be required of students outside this policy. This policy does not apply to tuition payments by nonresident students.

For the purposes of this policy, the following definitions shall apply:

1. Extracurricular activities means student activities or organizations which are supervised or administered by the school district, which do not count toward graduation or advancement between grades, and in which participation is not otherwise required by the school district;
2. Postsecondary education costs means tuition and other fees associated with obtaining credit from a postsecondary educational institution.

The district may charge student fees or require students to provide specialized equipment or attire in the following areas:

1. Participation in extracurricular activities, including extracurricular music courses;
2. Admission fees and transportation charges for spectators attending extracurricular activities;
3. Postsecondary education costs, limited to tuition and fees associated with obtaining credits from the postsecondary institution;
4. Transportation fees for option students not qualifying for free lunches and nonresident students as allowed by state statute;
5. Copies of student files or records as allowed by state statute;
6. Reimbursement to the district for property lost or damaged by the student;
7. Before-and-after-school or prekindergarten services in accordance with state statute;
8. Summer school or night school; and
9. Breakfast and lunch programs.

The district may also require students to furnish musical instruments for participation in optional music courses that are not extracurricular activities. Students qualifying for free or reduced-price lunches shall be provided with a musical instrument of the school's choice.

Waivers for any of the following shall be provided for students who qualify for free or reduced-price lunches:

- Fees and specialized equipment and specialized attire required for participation in extracurricular activities;
- Admission fees for onsite district-sponsored extracurricular activities and district transportation charges for spectators attending offsite extracurricular activities; and
- Materials required for course projects where the project becomes the property of the student upon completion.

The superintendent shall establish a Student Fee Fund and ensure that funds collected as fees for the following purposes are properly recorded and deposited to it:

- Participation in extracurricular activities;
- Postsecondary education costs; and
- Summer school or night school.

The superintendent shall promulgate regulations outlining the purposes for which fees in these three areas are collected and shall ensure such fees are spent for those purposes.

The superintendent shall promulgate regulations to be published annually in the student handbook authorizing and governing:

1. Any non-specialized clothing required for specified courses and activities;

2. Any personal or consumable items a student will be required to furnish for specified courses and activities;
3. Any materials required for course projects if the project becomes the property of the student upon completion; and
4. Any specialized equipment or specialized attire which a student will be required to provide for any extracurricular activity, including extracurricular music courses.

The superintendent shall also promulgate regulations authorizing and governing the following areas:

1. All fees to be collected within the nine numbered areas of the third paragraph of this policy;
2. Any other types of specialized equipment or attire to be provided by all students in the nine numbered areas of the third paragraph of this policy;
3. Procedures and forms for students or parent/guardians to apply for waivers under this policy;
4. Deadlines for waivers for all types of fees;
5. Procedures for allowing facilities use for NSAA District events to avoid conflict with this policy;
6. Procedures for students receiving postsecondary education credits;
7. Procedures for handling of fees related to summer school or night school;
8. Attendance requirements and procedures in connection with evening, weekend or summer use of facilities related to all extracurricular activities to avoid conflict with this policy;
9. Procedures for admitting students on waiver to extracurricular activities; and
10. Procedures for transportation of student spectators to extracurricular activities and collection of any related fees.

Public concerns or complaints regarding required fees, attire or equipment shall be addressed under Policy 1005.01, Public Complaints.

This policy will be reviewed and re-adopted annually by August 1 at a regular or special meeting of the board. This shall include a review of the amount of money collected under this policy and the use of waivers as provided by this policy. The policy shall be published in the student handbook provided at no cost to each student.

Legal Reference: Neb. Constitution, Art VII, Sect. 1

- Neb. Statute 79-215 (tuition)
- 79-241 (option student busing)
- 79-605 (nonresident busing)
- 79-611 (transportation fees)
- 79-734 (books, equipment and supplies)
- 79-2,104 (student files)
- 79-2,125 to 2,134 (student fees law)
- 79-1104 (before-and-after-school services)
- 79-1106 to 1108 (learners with high ability)

Cross Reference: 505.05 Fines for Lost or Damages Items

- 506 Student Activities
- 507.01 Student Records Access
- 801 Transportation
- 802.05 Free or Reduced Cost Meals Eligibility
- 1005.01 Public Complaints

Approved _____ Reviewed 8/13/2018 Revised _____

504.19R1 - STUDENT FEE WAIVER PROCEDURES

The board recognizes that while certain fees, specialized equipment, or specialized attire are appropriate and authorized, some students and their families are not financially able to afford them. The school district will grant waivers upon request to the students of families eligible for free or reduced priced meals under the federal Child Nutrition program.

Students or their parents must request a fee waiver prior to participating in or attending the activity, and prior to purchase of the materials. Waivers will not be approved retroactively for fees previously paid or specialized items, or attire purchased by students. Only those fees and items eligible for waivers as required by state statute shall be waived.

Parents or students eligible for waivers shall make an application on the form provided by the school district. Applications may be made at any time but must be renewed annually. Denial of a waiver may be appealed to the superintendent, but eligibility is strictly dependent upon meeting financial guidelines established by the Child Nutrition program.

The school district will treat the application and waiver process as any other student record and student confidentiality and access provisions will be followed.

The school district will annually notify parents and students of the waiver. The student fee policy and guidelines will be published annually in the Student Handbook.

AGREEMENT

THIS AGREEMENT made and entered into by and between **McCOOK PUBLIC SCHOOLS** of McCook, Nebraska (hereinafter referred to as the **OWNER**), and **W DESIGN ASSOCIATES** of McCook and **HASTINGS**, Nebraska, (hereinafter referred to as the **ENGINEER**).

Whereas the **OWNER** is retaining the **ENGINEER** for the purpose of design and construction administration for renovation of the Jr. High School Building's heating, ventilating and air conditioning systems. The general scope of the project(s) is the replacement of existing air handling units and the priority shall be as follows:

- Base project – U-2: Office Air Handler, U-3: Locker Room Air Handler, & U-4 Gymnasium Air Handler
- Alternate 1 – U-5: North Classroom Air Handler & U-6: South Classroom Air Handler
- Alternate 2 – U-7: Center Classroom Air Handler
- Alternate 3 – U-8: Lower-Level Air Handler
- Alternate 4 – U-1: South Wing Air Handler

except as modified by future school board and staff guidance and design development. It is understood that the initial project budget is \$400,000.00. The **OWNER** may increase this budget if additional funds become available.

RESPONSIBILITY OF OWNER

The **OWNER** agrees to:

1. Provide accurate information pertaining to their needs and wishes for the facility, and provide technical information pertaining to the equipment to be installed or relocated in the new building.
2. Review and comment on proposed plans, specifications and procedures submitted by the **ENGINEER** in a timely manner.
3. Execute contracts with the assistance of the **ENGINEER** with the various construction Contractors that are awarded work on the project and to pay all construction contract sums for work properly completed and accepted.
4. The **OWNER** shall pay all fees for regulatory reviews and construction permits.

RESPONSIBILITY OF THE ENGINEER

1. The **ENGINEER** shall prepare preliminary plans and specifications, a revised cost estimate and detail the phases required for construction and contract divisions.
2. The **ENGINEER** shall review with the **OWNER** and make agreed changes prior to

proceeding at 50% and 95% plan completion.

3. The **ENGINEER** shall prepare final plans and specifications that provide sufficient detail for regulatory authorities to review and for contractors to bid and build the project(s).
4. The **ENGINEER** will assist the **OWNER** in obtaining bids and negotiating contracts for the various portions of the project. The **ENGINEER** shall generally act as the **OWNER'S** agent in dealing with various contractors.
5. The **ENGINEER** shall provide periodic construction observation of the work to ensure it meets the intent of the plans and specifications and a final inspection to determine the work is substantially complete.
6. The **ENGINEER** shall review monthly contractor pay request summaries for the **OWNER**.
7. Nothing in this agreement shall be construed to indicate the **ENGINEER** is responsible for a contractor's actions or workmanship.

FEES AND PAYMENTS

The **OWNER** shall pay the **ENGINEER** a fee based on according to the following:

<u>Construction Cost</u>	<u>% Fee</u>
• First \$500,000.00	9%
• Next \$500,000.00	8 1/2%
• Next \$500,000.00	8%

The construction costs including all labor and equipment as specified for construction of the project(s). Should the **OWNER** select additional upgrades or elect to not accept alternates that the **ENGINEER** provided services for, the **OWNER** shall pay the **ENGINEER** a similar fee of value of the upgrades or alternates as bid by the awarded contractor. Any changes will be mutually agreed to in writing. Payments will be made to the **ENGINEER** based on the following fee schedule: 70% is will be for design and prorated throughout the various stages of design, 10% after receipt of bids and the final 20% will be prorated through the construction process. All payments are due 30 days from the date of billing. Late payments shall be charged interest at a rate of 1% per month.

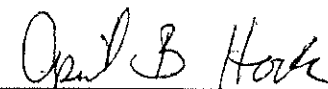
TERMS AND CONDITIONS

The attachments including A. SPECIAL TERMS AND CONDITIONS and B. GENERAL TERMS AND CONDITIONS are hereby made a part of this agreement.

This AGREEMENT entered into on the ____ day of May, 2021.



McCOK PUBLIC SCHOOLS
McCook, NE



W DESIGN ASSOCIATES
McCOK/HASTINGS, NE

A. SPECIAL TERMS AND CONDITIONS

1. ACCESS TO SITE

Unless otherwise stated, the A/E will have access to the site for activities necessary for the performance of the services at all reasonable hours.

2. INDEMNIFICATION

Owner agrees to indemnify and hold harmless the A/E from and against any and all claims, damages, losses, and expenses arising out of or resulting from the performance of the services under this agreement, provided that any such claim, damage, loss, or expense is not due to the negligent acts, errors, or omissions of the A/E.

3. DISPUTE RESOLUTION

In an effort to resolve any conflicts that arise during the design or construction of the project or following completion of the project, the Owner and the A/E agree that all disputes between them arising out of or relating to this Agreement shall be submitted to non-binding mediation unless the parties mutually agree otherwise. The Owner and the A/E further agree to include a similar mediation provision in all agreements with independent contractors and consultants retained for the project and to require all independent contractors and consultants also to include a similar mediation provision in all agreements with subcontractors, subconsultants, suppliers or fabricators so retained, thereby providing for mediation as the primary method for dispute resolution between the parties to those agreements.

4. OWNERSHIP OF DOCUMENTS

All reports, plans, specifications, field data and notes and other documents, including all documents on electronic media, prepared by the A/E as instruments of service shall remain the property of the A/E.

5. CODES AND STANDARDS COMPLIANCE

The A/E shall put forth reasonable efforts to comply with codes, regulations, laws, and statutes in effect as of the execution of this Agreement.

6. CONSTRUCTION OBSERVATION

The A/E shall visit the project at appropriate intervals during construction to become generally familiar with the progress and quality of the contractors' work and to determine if the work is proceeding in general accordance with the Contract Documents. The Owner has not retained the A/E to make detailed inspections or to provide exhaustive or continuous project review and observation services. The A/E does not guarantee the performance of, and shall have no responsibility for, the acts or omissions of any contractor, subcontractor, supplier, or any other entity furnishing materials or performing any work on the project.

7. DELAYS

The A/E is not responsible for delays caused by factors beyond the A/E's reasonable control, including but not limited to delays because of strikes, lockouts, work slowdowns or stoppages, accidents, acts of God, failure of any governmental or other regulatory authority to act in a timely manner, failure of the Owner to furnish timely information or approve or disapprove of the A/E's services or work product promptly, or delays caused by faulty performance by the Owner or by contractors of any level. When such delays beyond the A/E's reasonable control occur, the Owner agrees the A/E is not responsible for damages, nor shall the A/E be deemed to be in default of this agreement.

8. LIMITATION OF LIABILITY

In recognition of the relative risks and benefits of the project to both the Owner and the A/E, the risks have been allocated such that the Owner agrees, to the fullest extent permitted by law, to limit the liability of the A/E and his or her subconsultants to the Owner and to all construction contractors and subcontractors on the project for any and all claims, losses, costs, damages of any nature whatsoever or claims expenses from any cause or causes, so that the total aggregate liability of the A/E and his or her subconsultants to all those named shall not exceed \$250,000.00, or the A/E's total fee for services rendered on this project, whichever is greater. Such claims and causes include, but are not limited to negligence, professional errors or omissions, strict liability, breach of contract or warranty.

9. OPINIONS OF PROBABLE COST

In providing opinions of probable construction cost, the Owner understands that the A/E has no control over costs or the price of labor, equipment, or materials, or over the Contractors' method or pricing, and that the opinions of probable construction cost provided herein are to be made on the basis of the A/E's qualifications and experience. The A/E makes no warranty, expressed or implied, as to the accuracy of such opinions as compared to bid or actual costs.

10. SUBMITTALS

The A/E shall review and approve Contractor submittals, such as shop drawings, product data, samples and other data, as required by the A/E, but only for the limited purpose of checking for conformance with the design concept and the information expressed in the contract documents. This review shall not include review of the accuracy or completeness of details, such as quantities, dimensions, weights or gauges, fabrication processes, construction means or methods, coordination of the work with other trades or construction safety precautions, all of which are the sole responsibility of the Contractor. The A/E's review shall be conducted with reasonable promptness while allowing sufficient time in the A/E's judgment to permit adequate review. Review of a specific item shall not indicate that the A/E has reviewed the entire assembly of which the item is a component. The A/E shall not be responsible for any deviations from the contract documents not brought to the attention of the A/E in writing by the Contractor. The A/E shall not be required to review partial submissions or those which submissions of correlated items have not been received.

B. GENERAL TERMS AND CONDITIONS

1. GOVERNING LAW

The laws of the State of Nebraska will govern the validity of this Agreement, its interpretation and performance. Any litigation arising in any way from this Agreement shall be brought in the courts of that State.

2. STANDARD OF CARE

Service provided by the A/E under this Agreement will be performed in a manner consistent with that degree of care and skill ordinarily exercised by members of the same profession currently practicing under similar circumstances.

3. ASSIGNMENT

Neither party to this Agreement shall transfer, sublet, or assign any rights under or interest in this Agreement (including but not limited to monies that are due or monies that may be due) without the prior written consent of the other party.

4. TERMINATION

Either the Owner or the A/E may terminate this Agreement at any time with or without cause upon giving the other party ten (10) calendar days prior written notice. The Owner shall within thirty (30) calendar days of termination pay the A/E for all services rendered and all costs incurred up to the date of termination, in accordance with the Fees and Payments Section of this Agreement.

5. SEVERABILITY AND SURVIVAL

Any provision of this Agreement later held to be unenforceable for any reason shall be deemed void, and all remaining provisions shall continue in full force and effect. Articles A2, A3, A4, and A8 shall survive the termination of this Agreement and shall remain enforceable between the parties.

6. AMENDMENT

This Agreement shall not be amended except by written instrument signed by the parties hereto. This Agreement constitutes the entire and integrated agreement by and between the parties and supersedes any and all prior negotiations, whether written or oral.



McCook Public Schools
700 West 7th Street
McCook, NE 69001

**These Proposals are for the Junior High School Air Quality Project.
Pricing will need to be added to the Mechanical Contractors Proposal.
DDC Controls were removed from Base Bid on Addendum #2.**

**We are Proposing to install Honeywell DDC Controls for the Base Bid and each
Alternate as follows.**

**This Proposal is not to be confused with the Proposal for the Integration as requested
(separate proposal).
However, if the Owner moves forward with the Honeywell Open Protocol Integration this
work will coincide with the improvements.**

**Calendar Days to Completion will fall in line with whatever the General Contractor lists
on his Bid Form.**

<u>Base Bid</u>	<u>\$ 16,481</u>
<u>Alternate #1</u>	<u>\$ 13,928</u>
<u>Alternate #2</u>	<u>\$ 6,964</u>
<u>Alternate #3</u>	<u>\$ 6,694</u>
<u>Alternate #4</u>	<u>\$ 4,733</u>
<u>Alternate #5</u>	<u>\$ 39,416</u>

Thank you for the opportunity,

**Ron Paul
Rasmussen Mechanical Services
Gibbon Office
ron.paul@rasmech.com
402.250.5799**

**Overall Project Cost
McCook Public Schools - Jr. High Air Quality Project
McCook, Nebraska**

	Snell Services Inc. P.O. Box 629 North Platte, NE 69103 308-532-6874	* Controls Contract Rasmussen Gibbon Office 402-250-5799	W Design Fees
		Modify DDC Controls: \$45,336.00	Design Fee : \$103,888.00
Base Bid	\$972,500.00	\$16,481.00	Construction Fee: \$17,032.50
Alternate #1 Bid	\$179,300.00	\$13,928.00	Construction Fee: \$2,896.30
Alternate #2 Bid	\$99,100.00	\$6,964.00	Construction Fee: \$1,585.60
Alternate #3 Bid	\$95,600.00	\$6,694.00	Construction Fee: \$1,529.60
Alternate #4 Bid	\$57,300.00	\$4,733.00	Construction Fee: \$916.8
Alternate #5 Bid	\$125,700.00	\$39,416.00	Construction Fee: \$2,011.20
Notes:	No Controls Included		
Total:	\$1,529,500.00	\$130,000.00	\$129,860.00

Notes:

* Waiting on another Controls bid From Enginered Controls

Approval Request Form for Construction Project

NEBRASKA DEPARTMENT OF EDUCATION

Required of all Nebraska school districts that intend to utilize ESSER funds for Capital Assets for Construction Projects. Multiple projects can be placed on one form; however, all information should be provided for each of the projects.

Per 34 CFR § 76.600 construction projects must be approved by the NDE prior to bidding.

Federal requirements under, 2 CFR 200.319(a) states "all procurement transactions must be conducted in a manner providing full and open competition consistent with the standards of this section." In general, 2 CFR 200.320 outlines the five methods of procurement based on the acquisition threshold: micro-purchases, small purchases, sealed bids, competitive proposals, and noncompetitive (sole source) proposals. Federal requirements specifically related to contracts over the Simplified Acquisition Threshold established in the FAR (Federal Acquisition Regulation) currently set at \$250,000.

*Complete this form and return to:
Rhonda Wredt at rhonda.wredt@nebraska.gov*

If you have questions about completing the form or the components of the form, contact Tom Goeschel, Director of Grants Compliance tom.goeschel@nebraska.gov or Beth Wooster Administrator, Office of ESEA Programs Beth.Wooster@nebraska.gov

Name of School District: McCook Public Schools

School District Number: 73-0017

School District Superintendent: Grant Norgaard

Superintendent Email: gnorgaard@mccookbison.org

Superintendent Signature:

Required

Date: 7/22/21

Purpose

In order for the Nebraska Department of Education (NDE) to determine if a construction project proposed to be funded under the terms of ESSER funding is allowable, the District shall provide the information as requested on this form.

Our District <u>McCook Public Schools</u> plans to utilize (check one): <input type="checkbox"/> ESSER II <input checked="" type="checkbox"/> ESSER III For a construction project(s) that aligns to (check one or two): <input type="checkbox"/> #14 <input checked="" type="checkbox"/> #15

Procurement

- A. Describe the procurement process the district will utilize in completing the project. For a construction project, both engineering/architectural services and construction phase services will likely be procured separately.

The District's procurement process for completing the project began with the selection of a project manager to partner with the District. The Board of Education's Facilities Committee interviewed a local engineering firm, W-Design, and a regional energy service company (ESCO), Facility Advocates. During the interview process, the board committee learned about how each company would address the project and the estimated costs associated with its completion. Following the interviews, the Board of Education Selected the local engineering firm to partner with the district to help manage the project's completion. → see PDF for all Text!

- B. If the district will be using an existing procurement agreement that was entered into prior to receiving notification of its ESSER allocation please provide a description of the process used and both the effective dates and scope of the contract. **The district will need to keep copies of any documents that support the method of procurement used and a copy of the executed contract. This will be reviewed when the district is audited by NDE.**

The procurement process used by the District occurred following receipt of notification of its ESSER allocation.

Description of the Proposed Construction

Provide a detailed description of the proposed construction project(s). The description should identify those components of the project that the district believes are in direct response to COVID-19. Such examples of direct response components may include those related to air quality improvements, repair or replacement of windows and/or doors.

The District identified a building, McCook Jr. High, which had air handling units that were not providing adequate ventilation throughout the building and a chiller unit that were undersized. The Jr. High was built in the 60 ' s and it ' s HVAC system had only received minor updates over the years. The HVAC system was assessed to be in poor condition and in need of major updating, which involves the replacement of these large units. Once this project is complete, the new units will provide the air flow necessary to properly ventilate classrooms, halls, common space, and offices.

!! See PAF R - 11 text

Knowing the transmission of viruses can be mitigated by proper air flow, it became clear

- A. Identify those components of the project that would not be considered in direct response to COVID-19. Such examples of indirect project components may include the provision of temporary classrooms due to construction activities, components mandated by code requirements due to the construction of the direct components (i.e., ADA improvements, fire code related upgrades, etc.).

Our assessment of this project leads us to conclude that all of the components would be considered a direct response to COVID-19.

- B. Provide a general cost estimate related to each component of the construction project(s). (Attaching a budget would also be appropriate.)

BASE Bid - Snell Services, Inc \$972,500.00
 Front End controls - Rasmussen, Inc \$16481.00
 Architecture/engineering - W Design, Inc \$103,888.00
 construction Fee - W design, Inc \$17032.50

Prevailing Wage Compliance

Provide a description of how the district will meet its prevailing wage (i.e, Davis-Bacon) compliance requirements for the construction project. For example, 1) the district staff will be responsible for the implementation and management of these requirements, or 2) the district will contract with an engineering/architectural firm to manage the construction activities to ensure compliance.

The District has contracted with an engineering/architectural firm to manage the construction activities to ensure compliance with the Davis-Bacon Act. The District has had several meetings with W-Design concerning this issue, and how the firm will manage compliance. It is also important to state, all communications with potential contractors, including the contractor selected for the project, were notified of such requirements prior to the completion of the bid process.

Supervision and Inspection by the District

Describe how the district will meet the requirements of 34 CFR §75.612 requiring the district to maintain competent architectural engineering supervision and inspection at the construction site to ensure the work conforms to the approved drawings and specifications.

Our agreement with W-Design requires they have competent architectural and engineering supervision of the project, and that they inspect the construction site consistently to ensure the work conforms to the approved drawings and specifications.

Email Form to rhonda.wredt@nebraska.gov

Even though the district has indicated that they are hiring an architectural firm and/or a project manager, ultimately the responsibility to ensure compliance with prevailing wages, supervision, and all Federal requirements falls to the district. Remember to always check that the district is following this requirement.

FOR NDE USE ONLY:

Federal Programs Administrator Signature: 

Date: 7/29/21

Once signed by the Federal Programs Administrator, this form will be returned as a PDF document to the District Superintendent to attach to the Capital Assets page on the GMS Application for ESSER.

DRAFT

Procurement

- A. The District's procurement process for completing the project began with the selection of a project manager to partner with the District. The Board of Education's Facilities Committee interviewed a local engineering firm, W-Design, and a regional energy service company (ESCO), Facility Advocates. During the interview process, the board committee learned about how each company would address the project and the estimated costs associated with its completion. Following the interviews, the Board of Education Selected the local engineering firm to partner with the district to help manage the project's completion.

Following the selection of the engineering firm, a design that addressed all of the District's needs was developed, a bid request was made to provide potential contractors an opportunity to review and bid on the project. Contractors were allowed to look at the design and provided an opportunity to tour the facility. The contractors were also informed that this was a federally funded project and would need to follow federal regulations such as, but not limited to, the Davis-Bacon Act. Contractors were also notified of the bid deadline, and location and time of the bid opening.

One bid was turned in for the project, and that bid was approved at the Board of Education's August meeting.

- B. The procurement process used by the District occurred following receipt of notification of its ESSER allocation.

Description of the Proposed Construction Project

The District identified a building, McCook Jr. High, which had air handling units that were not providing adequate ventilation throughout the building and a chiller unit that were undersized. The Jr. High was built in the 60's and it's HVAC system had only received minor updates over the years. The HVAC system was assessed to be in poor condition and in need of major updating, which involves the replacement of these large units. Once this project is complete, the new units will provide the air flow necessary to properly ventilate classrooms, halls, common space, and offices.

Knowing the transmission of viruses can be mitigated by proper air flow, it became clear that this project would qualify for ESSER funds and would be an appropriate project for application. It also helped the District address an issue with their worn out air handling system, the air quality in the school, and staff and student health.

- A. Our assessment of this project leads us to conclude that all of the components would be considered a direct response to COVID-19.
- B. BASE Bid - Snell Services, Inc \$972,500.00 Front End controls - Rasmussen, Inc \$16481.00
Architecture/engineering - W Design, Inc \$103,888.00 construction Fee - W design, Inc \$17032.50

Prevailing Wage Compliance

The District has contracted with an engineering/architectural firm to manage the construction activities to ensure compliance with the Davis-Bacon Act. The District has had several meetings with W-Design concerning this issue, and how the firm will manage compliance. It is also important to state, all communications with potential contractors, including the contractor selected for the project, were notified of such requirements prior to the completion of the bid process.

Supervision and Inspection by the District

Our agreement with W-Design requires they have competent architectural and engineering supervision of the project, and that they inspect the construction site consistently to ensure the work conforms to the approved drawings and specifications.

McCOOK PUBLIC SCHOOLS

IN

McCOOK, NEBRASKA


SPECIFICATIONS


FOR A


JR. HIGH AIR QUALITY PROJECT

JUNE 2021




 McCook, Nebraska

 308.345.2370

 www.wdesignea.com

 Hastings, Nebraska

 402.463.2377

SPECIFICATIONS

FOR A

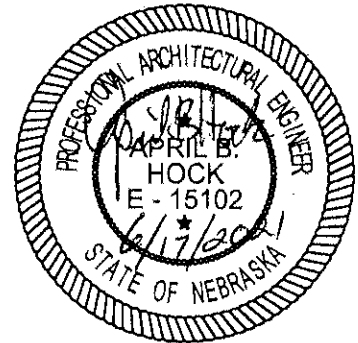
JR. HIGH AIR QUALITY PROJECT

FOR

McCOOK PUBLIC SCHOOLS

McCOOK, NEBRASKA

JUNE, 2021



**W DESIGN ASSOCIATES
CONSULTING ARCHITECTS & ENGINEERS
McCOOK/HASTINGS, NEBRASKA**

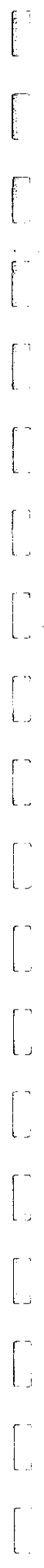


TABLE OF CONTENTS

DIVISION 1 - GENERAL REQUIREMENTS

- 00020 ADVERTISEMENT TO BID
- 00100 INSTRUCTIONS TO BIDDERS
- 00310 PROPOSAL FORM
- 00700 GENERAL CONDITIONS
 - AIA A201, 2017 Edition
- 00800 SUPPLEMENTARY CONDITIONS
- 01010 SUMMARY OF THE WORK
- 01045 CUTTING AND PATCHING
- 01100 ALTERNATE MATERIALS OR METHODS
- 01800 EXISTING FACILITIES

DIVISION III - CONCRETE

- 03300 CAST-IN-PLACE CONCRETE

DIVISION V - METALS

- 05050 ANCHOR BOLTS, EXPANSION ANCHORS,
TOGGLE BOLTS AND CONCRETE
INSERTS
- 05320 METAL ROOF DECK
- 05500 METAL FABRICATIONS

DIVISION VI - WOODS AND PLASTICS

- 06100 ROUGH CARPENTRY

DIVISION VII - THERMAL AND MOISTURE PROTECTION

- 07210 BUILDING INSULATION
- 07501 EXISTING MEMBRANE ROOFING

DIVISION XV - MECHANICAL CONSTRUCTION

- 15010 MECHANICAL
- 15610 BUILDING HVAC AUTOMATION

DIVISION XVI - ELECTRICAL CONSTRUCTION

- 16010 ELECTRICAL

SECTION 00020 - ADVERTISEMENT TO BID

McCook Public Schools, McCook, Nebraska, herein called OWNER will invite contractors to bid for the construction of the Jr. High Air Quality Project, McCook Nebraska as shown in the Contract Documents.

Sealed bids will be received until 2:00 P.M. on July 2, 2021 at the Jr. High Board Room, McCook Public Schools, 600 W. 7th Street, McCook, Nebraska 69001 at which time and place all bids will be publicly opened and read aloud. Mailed bids should be sent to McCook Public Schools, 700 West 7th Street, McCook, NE 69001 per instructions in Section 00100 – Instructions to Bidders.

All bids must be on the forms provided with the Specifications as prepared by W Design Associates, Architects and Engineers, Box 99, McCook, Nebraska, or 2626 West 2nd Street, Hastings Nebraska and bids received after closing will be returned unopened and shall not be considered.

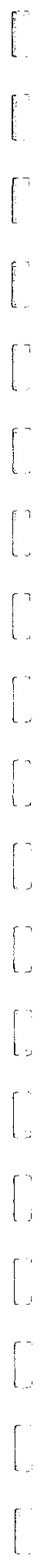
Prime bidders and major subcontractors may obtain plans for a deposit in the amount of \$100.00 Dollars at the office of the Architect between the hours of 8:00 a.m. to 5:00 p.m. Monday through Friday. Any bidder, or non-bidder, upon return of the contract documents within ten days of the bid date shall be refunded \$50.00 Dollars. Electronic copies of plans and specifications are available via a web address at NO COST to the Contractor by contacting Breanna Spitz at 402-463-2377.

Each bid shall be accompanied by a Certified Check or Bid Bond in an amount of not less than 5 percent of the total bid amount, and shall be made payable to the Owner as security that the bidder to whom the contract may be awarded will enter into contract to construct the project and give bond in the sum as herein stated for the construction of the project. Checks accompanying bids not accepted shall be returned to the bidders.

No bid shall be withdrawn after opening the bids without the consent of the Owner for a period of 30 days after the scheduled time of closing bids.

The successful bidder will be required to furnish a satisfactory Performance and Labor and Material Payment Bond in the sum of the full amount of the contract.

The Owner reserves the right to accept, reject or negotiate any or all bids and to waive any informality in the bidding.



00100 - INSTRUCTIONS TO BIDDERS

A. PROJECT DESCRIPTION

McCook Public Schools will receive bids for the Jr. High Air Quality Project as described in the Advertisement to Bid and Summary of the Work.

B. METHOD OF BIDDING

1. A Contractor may bid the work summarized on the Proposal Form 00310 and as described in the Summary of the Work, Section 01010. A Contractor shall bid all of the Alternates on the bid form. The Proposal Form - Section 00310 is the only acceptable method of bidding.

2. Proposals will be received at the date, time and location stated in the Advertisement for Bids or as modified by addendum.

3. Bids received after the stated time will not be considered.

4. Bids for any and all Contracts shall be delivered to the stated location by one of the following methods.

- a. Mail sealed bid to McCook Public Schools, 700 West 7th Street, McCook, NE 69001.
- b. Personal delivery to the address stated above or on the Advertisement for Bids.

C. PREPARATION OF PROPOSAL

1. Proposals from parties who are not known to be regularly and practically engaged in the class of work called for by the bidding documents will not be considered.

2. Mailed or Delivered bids must be submitted in a sealed envelope bearing on the outside the name of the bidder, the business address, and the name of the project for which the bid is submitted.

3. If forwarded by mail, the sealed envelope containing the bid must be enclosed in another envelope addressed as indicated above or in the Advertisement.

D. EXAMINATION OF PREMISES AND CONTRACT DOCUMENTS

1. Before submitting his bid, each bidder must (a) examine the contract documents thoroughly, (b) visit the premises to familiarize himself with local conditions that may in any manner affect performance of the work, (c) familiarize himself with Federal, State and local laws, ordinances, rules and regulations affecting performance of the work, and (d) carefully correlate his observations with the requirements of the contract documents.

2. The submission of a bid will constitute an incontrovertible representation by the bidder that he has complied with every requirement of this Paragraph.

E. BONDS

1. The successful bidder awarded the contract shall provide Performance and Payment Bonds in the full amount of the contract.

F. BIDDING DOCUMENTS

1. Bidding documents may be examined at the following locations.

- | | | |
|-----|--|---|
| 1.1 | W Design Associates
P.O. Box 99, 214 East 1 st
McCook, NE 69001 | W Design Associates
2626 West 2 nd St
Hastings, NE 68901 |
| 1.2 | McCook Public School
700 West 7 th St
McCook, NE 69001 | |

2. Bidding documents may be obtained from the Office of the Engineer as indicated below.

G. DEPOSIT ON BIDDING DOCUMENTS

1. For purposes of preparing and submitting a bid, Contractors may obtain Plans and Specifications as indicated on the Advertisement for Bid.

H. BID SECURITY

1. A certified check, cashier's check or an acceptable bidder's bond (AIA A-310) payable to the Owner in an amount not less than 5 percent of the largest possible total amount for the bid submitted, including the consideration of additive alternates, if any, must accompany each proposal. Such checks or bid bonds will be returned to all except the three lowest bidders within five (5) days after the opening of bids, and the remaining checks or bid bonds will be returned promptly after the Owner and the accepted bidder have executed the contract, or, if no award has been made within thirty (30) days after the bid opening date, upon demand of the bidder for his bid. The successful bidder, upon his failure or refusal to execute and deliver the contract and bonds required within ten (10) calendar days after he has received notice of the acceptance of his bid, shall forfeit to the Owner, as damages for such failure or refusal, the security deposited with his bid.

I. RIGHT OF OWNER

1. The Owner reserves the right to reject any or all bids or to waive irregularities in the bidding.

2. No bid may be withdrawn for a period of thirty (30) days subsequent to the opening of the bids without the consent of the Owner.

J. TAXES AND PERMIT FEES

The bidder shall not include Nebraska Sales and Use Tax in his proposal. The Owner is exempt from Nebraska State Sales and Use Taxes. Obtain Sales Tax Exemption number from Owner.

K. AWARD OR REJECTION OF BIDS

The Contract, if awarded, will be awarded to the responsible bidder who has proposed the lowest Bid and/or a timely completion date, subject to the Owner's right to reject any or all bids and to waive informality and irregularity in the bids and in the bidding.

L. DEFINED TERMS

1. Terms used in these Instructions to Bidders which are defined in the General Conditions of the Contract for Construction, Document A201, 2017 Edition, as well as documents supplied shall have the meanings assigned to them in the General Conditions.

2. All questions about the meaning or intent of the Contract Documents shall be submitted to the Engineer in writing. Replies will be issued by Addenda mailed or delivered to all parties recorded by the Architect as having received the bidding documents. Questions received less than seven calendar days prior to the date for opening of bids will not be answered. Only questions answered by formal written addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.

3. Substitution of materials or quality from that which is specified herein shall not be allowed unless approved by the Engineer prior to bid date. Proposals shall be based on the materials and/or quality as specified herein.

4. Requests for substitutions shall be accompanied by complete manufacturer's catalog information with the specific item clearly indicated.

M. COMPLETION DATES & LIQUIDATED DAMAGES

Contractors shall note the time of completion requirements in Section 00310, Proposal Form. Time is of the essence in completing this project. Contractors not completing their work by the completion dates as bid shall agree to pay as liquidated damages the amount shown on the form unless extensions are granted in writing.

00310 - PROPOSAL FORM

TO: McCOOK PUBLIC SCHOOL

PROPOSAL FOR: JR. HIGH AIR QUALITY PROJECT

The undersigned, having become familiar with the terms and conditions of the proposed Contract Documents and with local conditions affecting the cost of the work at the place where the Work is to be completed, and having fully inspected the site in all particulars, hereby proposes and agrees to fully perform the Work within the time stated and in strict accordance with the proposed Contract Documents, including furnishing any and all labor, materials and equipment required to construct and complete said Work in accordance with the Contract Documents, for the sum set forth for the following sum of money:

BASE BID – U-2 Office Rooftop Unit, U-3 Locker Room Rooftop Unit and U-4 Gymnasium Rooftop Unit.

_____ Dollars (\$ _____)

PROPOSED START DATE _____

CALENDAR DAYS TO COMPLETE BASE BID after Award of Contract and written Notice to Proceed. Total Project: _____ DAYS.

ALTERNATE #1 BID – U-5: North Classroom and U-6 South Classroom Air Handlers.

_____ Dollars (\$ _____)

CALENDAR DAYS TO COMPLETE ALTERNATE #1 _____ DAYS.

ALTERNATE #2 BID – U-7: Center Classroom Air Handler.

_____ Dollars (\$ _____)

CALENDAR DAYS TO COMPLETE ALTERNATE #2 _____ DAYS.

ALTERNATE #3 BID – U-8: Lower Level Air Handler.

_____ Dollars (\$ _____)

CALENDAR DAYS TO COMPLETE ALTERNATE #3 _____ DAYS.

ALTERNATE #4 BID – U-1: South Wing Air Handler .

_____ Dollars (\$ _____)

CALENDAR DAYS TO COMPLETE ALTERNATE #4 _____ DAYS.

ALTERNATE #5 BID – Replace re-heat coils in the classroom branch ductwork.

_____ Dollars (\$ _____)

CALENDAR DAYS TO COMPLETE ALTERNATE #5 _____ DAYS.

ALTERNATE #6 BID – Open Protocol, Non-proprietary HVAC Control System for Jr. High and High School.

_____ Dollars (\$ _____)

CALENDAR DAYS TO COMPLETE ALTERNATE #6 _____ DAYS.

Receipt of Addenda is hereby acknowledged:

No. _____ Date _____ No. _____ Date _____ No. _____ Date _____

I (we) acknowledge that the Owner reserves the right to reject any or all bids, to waive any informalities or technical defects or negotiate with any of the contractors who have submitted Proposals if the Owner deems it to be for his best interests.

If written notice of the acceptance of this bid is mailed or delivered to the undersigned within thirty days after the date set for the opening of this bid, or at any other time thereafter before it is withdrawn, the undersigned will execute and deliver the Contract Documents to the Owner in accordance with this bid as accepted, and will also furnish and deliver to the Owner proof of insurance coverage, all within 14 days after personal delivery or after deposit in the mails of the notification of acceptance of this bid.

The Bidder agrees to commence work within 10 days of a date to be specified in a written Notice to Proceed from the Owner and to fully complete the work no later than the number of calendar days specified above from the date of the written Notice to Proceed.

The Bidder further agrees to pay as liquidated damages the sum of One Hundred Fifty Dollars (\$150.00) per calendar day required to complete the work after that date.

CORPORATION SEAL:

SUBMITTED BY:

FIRM _____

SIGNATURE _____

DATE _____

SECTION 00800 - SUPPLEMENTARY CONDITIONS

INTRODUCTION

The following supplements modify, change, delete from or add to the "General Conditions of the Contract for construction", AIA Document A201, 2017 Edition. Where any Article of the General Conditions is modified or any Paragraph, Subparagraph or Clause thereof is modified or deleted by these Supplementary Conditions, the unaltered provisions of that Article, Paragraph, Subparagraph or Clause shall remain in effect.

1. After Subparagraph 3.10.1. add:

3.10.1. In planning his construction schedule within the agreed Contract time, it shall be assumed that the Contractor has anticipated the amount of adverse weather conditions normal to the site of the Work for the season or seasons of the year involved.

Only those weather delays attributable to other than normal weather conditions will be considered by the Architect/Engineer.

2. Reference is made to subparagraph 3.11.1. of the 'General Conditions'.

1.1. As the work proceeds, the contractor shall keep a careful record of mechanical, electrical, underground and other concealed work whose final in-place locations vary from those shown on the contract drawings, whether because of Change Orders or actual job conditions.

1.2. All such variations shall be shown on the field documents which shall be delivered to the Architect/Engineer before final payment is made.

3. In addition to the clean-up during construction required by Sub-paragraph 3.15.1. of the 'General Conditions', the Contractor shall, after the work has been completed, complete the following cleanup:

1.1. Vacuum clean interior of building, including HVAC ducts.

1.2. Comply with all special cleaning instructions contained in the Specifications.

1.3. Leave the entire construction and site clean and ready for occupancy.

4. At the end of subparagraph 4.6.1., add:

4.6.1. After appointment of the arbitrator or arbitrators, the parties to the arbitration shall have the right to take depositions and to obtain discovery regarding the subject matter of the arbitration and, to that end, to use and exercise all of the same rights, remedies, and procedures, and be subject to all of the same duties, liabilities, and obligations in the arbitration with respect to the subject matter thereof, as if the matter of the arbitration were pending in a civil action before a Superior Court of the State.

5. Add the following under this Paragraph 8.3.:

8.3.4. When the Contract time has been extended, as provided under this Paragraph 8.3., such extension of time shall not be considered as justifying extra compensation to the Contractor for administrative costs or other such reasons.

6. At the end of Subparagraph 9.3.1. add:

The form of Application for Payment shall be AIA Document G702, "Application and Certificate for Payment", supported by continuation sheet or sheets approved by the Architect/Engineer.

The Contractor shall submit his "Application for Payment" on or before the first day of each month. The "Application for Payment" shall be based on the value of materials properly stored at the site and/or work in place on that day and in accordance with the approved "Schedule of Values".

A retainage of ten percent (10%) of the first fifty percent (50%) of each Contractor's contract amount, shall be withheld until the final completion of the contract and final acceptance by the Owner, unless adjusted as shown below.

At the end of subparagraph 9.4.1. add:

The Certificates of Payment shall be issued at the rate of ninety percent (90%), up to the first fifty percent (50%) of the contract amount, and shall then increase to one hundred percent (100%) for the remainder of the contract amount, and shall be based on the value of material properly stored at the site and work in place if in full compliance with the contract during the preceding calendar month. However, if the Architect/Engineer does not feel that the progress made is such to indicate the compliance with all work done under that contract, the Certificate of Payment shall revert back to ninety percent (90%) of the completed value of work in place until such progress is satisfactory to the Architect.

Add the following clause 9.6.1.1. to 9.6.1.:

9.6.1.1. The Owner shall make progress payments on account of the Contract to the Contractor for the period ending the last day of the month not later than forty-five days following the end of the period covered by the Application for Payment.

7. The insurance referred to in Subparagraph 11.1.1. of the 'General Conditions' shall be of the following types and in amounts not less than the following:

A. Worker's Compensation:

- | | |
|--------------------------|----------------|
| (a) State: | Statutory |
| (b) Applicable Federal: | Statutory |
| (c) Employer's Liability | \$1,000,000.00 |

B. Comprehensive General Liability (including Premises-Operations; Independent Contractors' Protective; Products and Completed Operations; Broad Form Property Damage):

- (a) Bodily Injury:
 - \$1,000,000.00 Each Occurrence
 - \$1,000,000.00/\$1,000,000 Annual Aggregate
- (b) Property Damage:
 - \$1,000,000.00 Each Occurrence
 - \$1,000,000.00 Annual Aggregate
- (c) Products and Completed Operations to be maintained for one year after final payment.
- (d) Property Damage Liability Insurance will provide X, C or U coverage, as applicable.

C. Contractual Liability:

- (a) Bodily Injury:
 - \$1,000,000.00/\$1,000,000 Each Occurrence
- (b) Property Damage:
 - \$1,000,000.00 Each Occurrence
 - \$1,000,000.00 Annual Aggregate

D. Personal Injury, with Employment Exclusion deleted:

- \$1,000,000.00 Annual Aggregate

E. Comprehensive Automobile Liability:

- (a) Bodily Injury:
 - \$1,000,000.00 Each Person
 - \$1,000,000.00/\$1,000,000 Each Occurrence
- (b) Property Damage:
 - \$1,000,000.00 Each Occurrence

F. Umbrella Liability Coverage

- (a) \$1,000,000.00

This umbrella coverage shall be over and above the stated coverages and amounts.

G. Additional insurance required. Contractor shall carry in addition to that specifically named by the 'General Conditions', as follows:

- (a) Completed Operations and Products Liability. Maintained for one (1) year, commencing with issuance of Final Certificate for Payment.

H. Property Insurance. Builder's Risk Insurance will be provided by the Owner, as required in AIA Document A201.

- I. Furnish one copy of certificates herein required for each copy of the Agreement, specifically setting forth evidence of all coverage required by Article 11.1.1. of the 'General Conditions'. The form of the Certificate shall be the American Institute of Architects Document G705 or equivalent.

8. Revise Subparagraph 13.4.1. as follows:

If the Contract Documents, laws, ordinances, rules, regulations or orders of any public authority having jurisdiction require any portion of the Work to be inspected, tested or approved, the Contractor shall give the Architect/Engineer timely notice of its readiness so the Architect/Engineer may observe such inspection, testing or approval. The Contractor shall bear all costs of such inspections, tests or approvals.

FORM OF AGREEMENT

9. The form of agreement to be used for this project is on file for reference at the office of the Architect/Engineer.

WATER AND ELECTRICITY

10. The Contractor shall furnish such amounts of water and electricity as may be needed for the prosecution of his work and that of all other contractors and subcontractors. The contractor will be responsible for arranging for delivery of all of the service whether they be temporary services or the permanent service called for in the plan.

SANITARY CONVENIENCES

11. Sanitary conveniences for use of all persons employed on the work shall be provided by the contractor.

TEMPORARY HEAT

12. In order to maintain normal progress of the work, the contractor shall erect temporary enclosures and provide temporary heat as required for wall, floor, roof or other construction.

1.1. Required temperatures of the enclosures shall be as specified in the various technical sections of the specifications.

OWNER-FURNISHED ITEMS

13. Certain items as shown and/or scheduled on the Drawings will be either existing or furnished by the Owner and shall be installed by the contractor. If not existing, the Owner will deliver these items to the site, unload same and stack materials where directed by the contractor and approved by the Architect/Engineer. The contractor will be

responsible for unwrapping, uncrating, counting, verifying sizes and lengths and providing all labor, equipment and services necessary for the erection of all materials detailed or specified herein.

- A. The Owner will provide the contractor with adequate shop drawings to cover the complete installation of all owner-furnished items, except when items are existing, relocated or reused.
- B. This contractor shall be required to perform all field cuttings, fitting and adjustments as might be required to complete the work. He shall carefully coordinate his work with the Owner to preclude omission or double supply. The contractor shall submit a delivery date request to the Architect/Engineer for all Owner-supplied materials to insure the availability of these materials as they become needed.

SHOP DRAWINGS, PRODUCT DATA AND SAMPLE SUBMITTALS

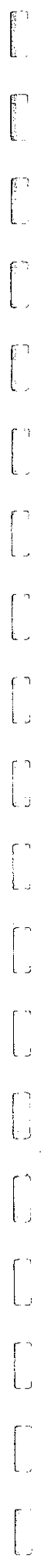
- 14. The contractor shall furnish the following: One (1) electronic copy of product data, and two (2) samples of materials, unless otherwise directed or specified.
 - A. The contractor shall reproduce as many copies of the shop drawings as required for distribution for proper execution of the work.
 - B. Shop drawings are not required and will not be reviewed on stock manufactured items.
 - C. All shop drawings will be submitted to the Architect/Engineer within thirty (30) days of the Notice to Proceed.

DRAWINGS

- 15. The Drawings are made a part of this Manual.

SCHEDULING OF WORK

- 16. Insofar as is practicable, the contractor shall confine his operations to those parts of the site in which the construction work is located.



SECTION 01010 - SUMMARY OF THE WORK

1. LOCATION

This project is located at 600 West 7th Street, the McCook Public Schools Junior High Building.

2. GENERAL

This project is the replacement 3 Air Handlers up to a total of 8 Air Handlers and replacing Re-heat Coils. The work includes but is not limited to:

- Base Bid – This project consists of replacing office, locker room and gymnasium air handlers with new rooftop units and adding a chiller for cooling. Included in this work is associated electrical, chilled and heating piping, ductwork, etc. needed to install the equipment.

Also part of this work is to remove Air Handlers in Gymnasium and Mechanical Room.

- Alternate #1 Bid – This work consists of replacing North Classroom and South Classroom air handlers with new air handlers. Included in this work is associated electrical, chilled and heating piping, ductwork, etc. needed to install the equipment.
- Alternate #2 Bid – This work consists of replacing Center Classroom air handler with new air handler. Included in this work is associated electrical, chilled and heating piping, ductwork etc. needed to install the equipment.
- Alternate #3 Bid – This work consists of replacing Lower Level air handler with new air handler. Included in this work is associated electrical, chilled and heating piping, ductwork etc. needed to install the equipment.
- Alternate #4 Bid – This work consists of replacing South Wing air handler with new air handler. Included in this work is associated electrical, refrigerant piping, heating piping, ductwork etc. needed to install the equipment.
- Alternate #5 Bid – This work consists of replacing the Re-heat coils in the Classroom branch ductwork. Included in this work is associated ductwork, ductwork access hatches and reconnection to existing heating piping in ceiling space.
- Alternate #6 Bid – This work consists of replacing or modifying the existing HVAC Control Package. Included in this work is new open protocol, non-proprietary software front end, control contacts new or modified, control heads and all control wiring for the Jr. High and High School HVAC equipment. The front end shall be able to be expanded to other buildings within the School District. Controls Contractor shall schedule a time with the Engineer to visit the buildings.

3. CONTRACTOR USE OF PREMISES

- A. Coordinate all activities with School and Engineer. If school is in session Contractor will be required to limit work activities to only mechanical spaces and exterior during school hours. McCook Public Schools reserves the right to limit access as they determine to maintain a safe environment for the students.
- B. If heating units are taken out of service while school is in session, the Contractor shall provide temporary heat as needed. Cooling units may be taken out of service only on nights, weekends, when school is not in session, or after cooling season.
- C. Confine interior operations to the work area required for installation of Rooftop Units, Air Handlers and ductwork. Portions of the site beyond areas in which construction operations are indicated are not to be disturbed.
- D. Keep driveways and entrances serving the premises clear and available to the Owner and the Owner's employees at all times. Do not use these areas for parking of storage or materials. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on site.

4. TIME OF COMPLETION

The completion date is critical for this project. The completion date is specified on the bid form and can only be changed through mutual agreement in writing by both parties. Contractors not completing their work by the completion date shall agree to pay as liquidated damages the amount shown on the bid form.

SECTION 01045 - CUTTING AND PATCHING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to this Section.

1.02 SUMMARY

A. This Section specifies administrative and procedural requirements for cutting and patching. Refer to other Sections for specific requirements and limitations applicable to cutting and patching individual parts of the Work.

1. Requirements of this Section apply to mechanical and electrical installations. Refer to Division-15 and Division-16 Sections for other requirements and limitations applicable to cutting and patching mechanical and electrical installations.

1.03 SUBMITTALS

A. Cutting and Patching Proposal: Where approval of procedures for cutting and patching is required before proceeding, submit a proposal describing procedures well in advance of the time cutting and patching will be performed and request approval to proceed. Include the following information, as applicable, in the proposal:

1. Describe the extent of cutting and patching required and how it is to be performed; indicate why it cannot be avoided.
2. Describe anticipated results in terms of changes to existing construction; include changes to structural elements and operating components as well as changes in the building's appearance and other significant visual elements.
3. List products to be used and firms or entities that will perform Work.
4. Indicate dates when cutting and patching is to be performed.
5. List utilities that will be disturbed or affected, including those that will be relocated and those that will be temporarily out-of-service. Indicate how long service will be disrupted.
6. Approval by the Engineer to proceed with cutting and patching does not waive the Engineer's right to later require complete removal and replacement of a part of the Work found to be unsatisfactory.

1.04 QUALITY ASSURANCE

A. Requirements for Structural Work: Do not cut and patch structural elements in a manner that would reduce their load-carrying capacity or load-deflection ratio.

1. Obtain approval of the cutting and patching proposal before cutting and patching the following structural elements:
 - a. Foundation construction.
 - b. Bearing and retaining walls.
 - c. Structural concrete.
 - d. Structural steel.
 - e. Lintels.
 - f. Structural decking.
 - g. Stair systems.
 - h. Miscellaneous structural metals.
 - i. Equipment supports.
 - j. Piping, ductwork, vessels and equipment.

- B. Operational and Safety Limitations: Do not cut and patch operating elements or safety related components in a manner that would result in reducing their capacity to perform as intended, or result in increased maintenance, or decreased operational life or safety.
 1. Obtain approval of the cutting and patching proposal before cutting and patching the following operating elements or safety related systems:
 - a. Primary operational systems and equipment.
 - b. Air or smoke barriers.
 - c. Water, moisture, or vapor barriers.
 - d. Membranes and flashings.
 - e. Fire protection systems.
 - f. Noise and vibration control elements and systems.
 - g. Control systems.
 - h. Communication systems.
 - i. Electrical wiring systems.

- C. Visual Requirements: Do not cut and patch construction exposed on the exterior or in occupied spaces, in a manner that would, in the Engineer's opinion, reduce the building's aesthetic qualities, or result in visual evidence of cutting and patching. Remove and replace Work cut and patched in a visually unsatisfactory manner.
 1. If possible retain the original installer or fabricator to cut and patch the following categories of exposed Work, or if it is not possible to engage the original installer or fabricator, engage another recognized experienced and specialized firm:
 - a. Processed concrete finishes.
 - b. Acoustical ceilings.
 - c. Carpeting.

PART 2 - PRODUCTS

2.01 MATERIALS

Use materials that are identical to existing materials. If identical materials are not available or cannot be used where exposed surfaces are involved, use materials that match existing adjacent surfaces to the fullest extent possible with regard to visual effect. Use materials whose installed performance will equal or surpass that of existing materials.

PART 3 - EXECUTION

3.01 INSPECTION

Before cutting existing surfaces, examine surfaces to be cut and patched and conditions under which cutting and patching is to be performed. Take corrective action before proceeding, if unsafe or unsatisfactory conditions are encountered.

Before proceeding, meet at the site with parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

3.02 PREPARATION

- A. Temporary support: Provide temporary support of Work to be cut.
- B. Protection: Protect existing construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of the Project that might be exposed during cutting and patching operations.

3.03 PERFORMANCE

- A. General: Employ skilled workmen to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time and complete without delay.
 - 1. Cut existing construction to provide for installation of other components or performance of other construction activities and the subsequent fitting and patching required to restore surfaces to their original condition.
- B. Cutting: Cut existing construction using methods least likely to damage elements to be retained or adjoining construction. Where possible review proposed procedures with the original installer; comply with the original installer's recommendations.
 - 1. In general, where cutting is required use hand or small power tools designed for sawing or grinding, not hammering and chopping. Cut holes and slots neatly to size required with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.

2. To avoid marring existing finished surfaces, cut or drill from the exposed or finished side into concealed surfaces.
 3. Cut through concrete and masonry using a cutting machine such as a carborundum saw or diamond core drill.
 4. Comply with requirements of applicable Sections of Division-2 where cutting and patching requires excavating and backfilling.
 5. By-pass utility services such as pipe or conduit, before cutting, where services are shown or required to be removed, relocated or abandoned. Cap, valve or plug and seal the remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after by-passing and cutting.
- C. Patching: Patch with durable seams that are as invisible as possible. Comply with specified tolerances.
1. Where feasible, inspect and test patched areas to demonstrate integrity of the installation.
 2. Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
 - a. Where patching occurs in a smooth painted surface, extend final paint coat over entire unbroken surface containing the patch, after the patched area has received primer and second coat.

3.04 CLEANING

Thoroughly clean areas and spaces where cutting and patching is performed or used as access. Remove completely paint, mortar, oils, putty and items of similar nature. Thoroughly clean piping, conduit and similar features before painting or other finishing is applied. Restore damaged pipe covering to its original condition.

SECTION 01100 - ALTERNATE MATERIALS OR METHODS

1. ALTERNATE MATERIALS

A. Standard Manufacturer

Wherever the terms "Standard", "Recognized" or "Reputable" manufacturer are used, they shall be construed as meaning manufacturers who have been engaged in the business of fabricating materials, equipment or supplies for a period of over twelve months prior to the date fixed for opening bids.

B. "Or Equal" Clause

Whenever, in any section of the contract documents, plans or specifications, any article, material, or equipment is defined by describing a proprietary product, or by using the name of a manufacturer or vendor, the term "or approved equal", if not inserted, shall be implied. The specific article, material or equipment mentioned shall be understood as indicating the type, function, minimum standard of design, efficiency and quality desired and shall not be construed in such a manner as to exclude manufacturers of comparable quality, design and efficiency.

A bidder wishing to substitute a material or product in lieu of an item specified shall submit all appropriate information as called out in the Instructions to Bidders. No changes shall be accepted after submission of proposals unless they result in an improvement to the project and are accepted in writing by the Architect/Engineer or result in an acceptable credit to the owner without prejudice to the project and then only if accepted in writing by the Architect/Engineer.



SECTION 01800 - EXISTING FACILITIES

1. GENERAL

Attention is called to the existence of buried water lines, gas lines, sewer lines, electric and telephone lines within the project limits. The Contractor assumes full responsibility for the location and protection of all utilities, buried or overhead, during the construction operations.

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SECTION 03300 - CAST IN PLACE CONCRETE

1. GENERAL

Furnish all labor and materials to complete all items of plain and reinforced concrete work indicated on the drawings and/or specified herein. Contractor shall provide all items, articles, materials, operations or methods, listed, mentioned, or scheduled on the drawings and/or these specifications including all labor, materials, equipment, and incidentals necessary and required for their completion. Coordinate work of all trades regarding installation of embedded items.

2. SHOP DRAWINGS

Submit four (4) copies each of bar schedules, bending diagrams, and placing drawings to the engineer for approval prior to fabricating any reinforcing steel.

3. CONCRETE TESTS

All 6" x 12" cylinders shall be taken at point of placing in forms, cured, and tested in accordance with ASTM standards by a recognized testing laboratory. The laboratory shall be approved by the engineer and tests paid for by the contractor and the contractor shall cooperate at all times and shall provide any labor and materials necessary to make concrete tests. The engineer shall order all tests. For each strength of concrete used take one set of two (2) cylinders for each day's pour but not less than one (1) set of cylinders for each 100 cubic yards poured. Test one (1) cylinder at seven (7) days and one (1) cylinder at twenty-eight days. In addition, when, in the opinion of the engineer, there is a possibility of the surrounding air temperature falling below 40 Degrees F., additional specimens to be cured under job conditions may be required.

If the average strength of the laboratory control cylinders for any portion of the structure falls below the compressive strengths called for in the specifications, the engineer shall have the right to order a change in the mix proportions or the water content for the remainder of the job. If the average strength of the job cured cylinders falls below the required strength, the engineer shall have the right to require conditions of temperature and moisture necessary to secure the required strength.

If either control cylinders or job-cured cylinders indicate that any portion of the structure contains concrete of less than the specified strength, the engineer shall have the right to order additional curing and/or core tests in accordance with "Standard Methods of Securing, Preparing and Testing Specimens of Hardened Concrete for compressive and Flexural Strength," ASTM Designation C42-62. He shall also have the right to order load tests in accordance with provisions of the local building code. Any portions of the structure found to be inadequate may be ordered strengthened or replaced and the costs of the remedial work and of the tests shall be borne by the contractor. Mail copies of all test reports to the owner, engineer, contractor and the local building department.

4. RECORD OF WORK

Keep record of time, date and location of each concrete pour and submit these records monthly to the engineer.

5. CEMENT

Portland Cement Type I conforming to "Standard Specifications for Portland Cement" ASTM Designation C150-62. Use same brand, well aged, throughout the project. Furnish mill test sheets on all cement used on the project. The amount used shall be six (6) sacks per cubic yard for Class "A" Concrete and six (6) sacks per cubic yard for class "B" Concrete.

6. CLASSES OF CONCRETE

All concrete shall be either Class "A" sand-gravel or Class "B" combined aggregate concrete as shown in the Plans and Specifications.

A. Class "A" Sand-Gravel Concrete

Sand-gravel for concrete shall be Platte River aggregate consisting of a mixture of sand and gravel composed of clean, hard, durable, unweathered, uncoated pebbles free from injurious amounts of soft or flaky particles, shale, alkali, organic matter or other deleterious material.

The gradation of sand-gravel for class "A" concrete shall meet the requirements that are prescribed in the following table:

Gradation, Total %	Target	Tolerance
Passing on 1" sieve	100	0
Passing on No. 4 sieve	66	±22
Passing on No. 10 sieve	37	±13
Passing on No. 30 sieve	12	±8
Passing No. 200 sieve, removed by washing	1.5	±1.5
Clay lumps, % by weight		0.5

The gradation shown for sand-gravel aggregate represents the extreme limits which shall determine suitability for use from all sources of supply. The gradation from any one source shall be reasonably uniform and not subject to the extreme percentages of gradation as specified above.

For the purpose of determining the degree of uniformity, a fineness modulus determination shall be made upon representative samples submitted by the contractor. Sand-gravel from different sources of supply shall not be mixed or stored in the same pile or used alternately in the same class of construction or mix without permission from the engineer.

Organic Impurities: Sand-gravel subjected to the colorimetric test for organic impurities shall not show a color darker than the standard color specified in A.A.S.H.O. Designation T 21-42.

Soundness: Sand-gravel shall not have a loss greater than 15 percent of the weight average loss at 5 cycles when tested in magnesium sulfate. The soundness shall be determined by the Standard Method Of Test, A.A.S.H.O. Designation T 104-57.

The total weight of aggregate used shall be 2880 lbs. per cubic yard of concrete.

B. Class "B" Combined Aggregate Concrete - State of Nebraska "47B".

Class "B" Concrete shall consist of a mixture of fine and coarse aggregates. The fine aggregate shall consist of Platte River gravel composed of clean, hard, durable, unweathered, uncoated pebbles free from injurious amounts of soft or flaky particles, shale, alkali, organic matter or other deleterious material.

The gradation of fine aggregate for Class "B" concrete shall meet the requirements that are prescribed in the following table:

Gradation %	Target	Tolerance
Passing on 1" Sieve	100	0
Passing on No. 4 Sieve	87	±10
Passing on No. 10 Sieve	60	±10
Passing on No. 30 Sieve	28	±12
Passing No. 200 Sieve, removed by washing	1.5	±1.5
Clay lumps, % by weight		0.5

The coarse aggregate for Class "B" concrete shall consist of crushed limestone and shall meet the gradation requirements shown in the following tables:

Gradation %	Target	Tolerance
Passing on 1-1/2" Sieve	100	0
Passing on 1" Sieve	100	-8
Passing on 3/4" Sieve	78	±12
Passing on 3/8" Sieve	30	±15
Passing on No. 4 Sieve	6	±6
Passing on No. 20 Sieve	2	±2
Passing No. 200 Sieve	1.5	±1.5

The gradation for fine and coarse aggregates represents the extreme limits which shall determine suitability for use from all sources of supply. The gradation from any one source shall be reasonably uniform and not subject to the extreme percentages of gradation as specified above. For the purpose of determining the degree of uniformity, a fineness modulus determination shall be made upon representative samples submitted by the contractor. Aggregates from different sources of supply shall not be mixed or stored in the same pile nor used alternately in the same class of construction or mix without permission from the engineer.

The total weight of the combined aggregate shall be 3,000 pounds per cubic yard of which 70 percent shall be fine aggregate and 30 percent shall be coarse aggregate.

7. WATER

Potable water, clean and free from deleterious amounts of oil, acids, alkalis, and organic matter, not to exceed six (6) gallons per sack of cement.

8. REINFORCING STEEL

Reinforcing steel shall be high strength deformed bars conforming to the requirements of ASTM A615 or ASTM A617 Grade 60.

9. WELDED WIRE FABRIC

Welded wire fabric shall be of gauge and mesh size shown on the drawings and shall conform to the requirements of ASTM A185.

10. ADMIXTURES

"Protex" air-entraining agent as manufactured by Protex Industries, Inc. Other admixtures for retarding or accelerating concrete may be used in strict accord with manufacturer's recommendation, upon approval of the engineer and provided strength tests have been performed on mixes containing the admixtures in the proportions to be used.

11. MEASUREMENTS

Measurements of solid materials to be by weight only, in pounds, with all ingredients weighed separately. Water to be by weight in pounds, or volume in U.S. gallons in such a manner as can be closely controlled for each batch of concrete. Total water content shall include moisture in the aggregates.

12. STORAGE OF MATERIALS

Cement and aggregates shall be stored in such a manner as to prevent deterioration or intrusion of foreign matter. Any material which has deteriorated or which has been damaged shall not be used for concrete.

13. CONCRETE MIX PROPORTIONS

Concrete to be proportioned according to laboratory designed mixes and producing minimum twenty-eight (28) day ultimate compressive strength of 3,500 psi for Class "A" concrete and 4,000 psi for Class "B" concrete.

A designated laboratory shall design the mixes and test the materials to be used for concrete. Laboratory mixes shall be of the same consistency and contain the same proportions of materials as the actual job mixes. Test specimens shall be made in accordance with "Standard Method of Making and Curing Concrete compression and Flexure Test Specimens in the Laboratory", ASTM Designation C192 and tested in accordance with "Standard Methods of Test for

Compressive Strength of Molded Concrete Cylinders, Tentative", ASTM Designation C39. Contractor shall submit materials to the designated laboratory in ample time for testing. Copy of design to be submitted to the engineer and no substitutions shall be made without additional tests to show the quality of concrete is in accordance with these specifications. Cost of the design mix shall be borne by the general contractor. The maximum water-cement ratio allowable shall be 0.53.

14. CONCRETE CONSISTENCY

Slump shall be minimum consistent with placing requirements. Slump tests shall be made in accordance with "Slump Test for consistency of Portland Cement Concrete", ASTM Designation C143. The maximum slump and maximum size aggregate shall conform to the following limits.:

<u>Structural Component</u>	<u>Slump</u>	<u>Maximum Size Aggregates</u>
Footings	3"	3/4"
Walls	4"	3/4"
Slabs	4"	3/4"
Beams	3"	3/4"

15. AIR-ENTRAINMENT

Air-entraining agent shall be added to all concrete so as to entrain 6.0 percent plus or minus 1 percent entrained air by volume. Use air-entraining agents in strict accordance with recommendations of the manufacturer and testing laboratory for the design mix so as to assure strength requirements being fully met or exceeded.

16. MIXING

The concrete shall be mixed until there is a uniform distribution of the materials and shall be discharged completely before the mixer is recharged. For job-mixed concrete, the mixer shall be rotated at speed recommended by the manufacturer. Ready-mixed concrete shall be mixed and delivered in accordance with "Specifications for Ready-Mixed Concrete", ASTM Designation C94.

Sufficient time shall be allowed for proper mixing of the concrete to provide uniformity throughout the batch. Long delays in mixing or long waiting periods before the concrete is placed, shall be avoided. Overwet mixes shall be rejected and shall not be corrected by the addition of either aggregate or cement to the mixer. Mix no less than ten minutes in transit mix trucks after addition of the mixing water. If an extra charge of water is required at the job site because of too low a slump, the drum shall be turned a minimum of thirty (30) revolutions after addition of such water.

17. CONCRETE FORMS

Forms shall be of wood or metal conforming to shapes, lines, grades, and dimensions of concrete as shown on the drawings, suitable and adequate for intended use, and sufficiently tight to

prevent leakage of mortar. Forms shall be properly braced and tied so as to maintain position during and after pouring of concrete and designed for removal without injury to the concrete. Undressed lumber, free from excessive knots is permitted for form-work for unexposed concrete.

For exposed concrete work use plywood forms or form liners in large sheets with smooth, even edges, installed with close joints. Form tightening, arranged so that no metal is within 3/4" of surface after removal of forms. Set forms for all required anchors bolt inserts, slots, sleeves, supports, etc., furnished under other portions of this specification and installed under this section. All exposed edges shall be chamfered.

All forms shall be constructed so that all joints and edges conform to true lines and grades. If, in the opinion of the engineer, the forms do not satisfactorily comply with these requirements, he may require the contractor to take remedial action to produce the desired product.

Coat forms with approved sealers or non-staining oils prior to setting reinforcing.

18. REMOVAL OF FORMS

Forms shall be removed only when permitted by the engineer and then in such a manner as to insure the complete safety of the structure. Under normal conditions the following table shall be used as the minimum time in which forms may be removed, but its use shall not relieve the contractor of responsibility for safety of the structure.

<u>Temperature</u>	<u>Above 60 D.</u>	<u>50 to 60 D.</u>	<u>40 to 50 D.</u>
Walls	3 days	5 days	10 days
Side Forms of Beams	4 days	6 days	10 days
Bottom Forms of Slabs	10 days	14 days	18 days
Bottom Forms of Beams	14 days	18 days	21 days

Forms may be removed earlier if adequate shores or approved reshores are left in place. When temperatures below 40 Degrees F. occur, the shores shall remain in place for an additional time equal to the time the structure has been exposed to the lower temperature.

19. CONSTRUCTION JOINT

Construction joints are to be avoided in exposed concrete. Where necessary, joints and finish are to match adjacent concrete. Make construction joints in slabs and beams near the middle of the span in a manner to assure straight level joint. Provide additional web reinforcing as directed by the Engineer at points of heavy shear.

The contractor shall saw cut control joints in all exposed concrete slabs at minimum intervals of 15'. The joints shall be 2" deep on 8" thick slabs and 1-1/2" deep on 6" thick slabs.

Additional control joints shall be cut as shown on the plans or as directed by the engineer around floor penetrations or irregular sections.

20. PLACING REINFORCING STEEL

Reinforcing steel, at the time concrete is placed, shall be free from loose rust, scale, or other coatings that will destroy or reduce bond. Reinforcing shall be accurately placed as shown on the drawings and shall be adequately secured in position by metal chairs and spacers. Splicing of bars shall be made as close as practicable to points of minimum stress. Splice lengths shall be indicated on the drawings or in accord with ACI Code requirements.

Place Wire Mesh. Extend fabric to within two inches (2") of the edges of the slab and lap splices at least one and one-half (1-1/2) courses of the fabric and a minimum of six inches (6"). Tielaps and splices securely at ends and at least every 24 inches with 16-gauge black soft-annealed steel wire. Pull the fabric into position as the concrete is placed by means of hooks and work concrete under the steel to insure that it is placed at the proper distance above the bottom of the slab.

21. CONCRETE PROTECTION FOR REINFORCEMENT

Where not otherwise indicated on the Plans, the minimum thickness of concrete over the reinforcement shall be as follows:

- A. Where concrete is deposited against ground without forms - 3".
- B. Where concrete is exposed to the weather, or exposed to the ground but placed in forms - 2" for bars larger than #5, 1-1/2" for #5 bars or smaller.
- C. Slabs and walls not exposed to the ground or weather - 3/4".
- D. Beams not exposed to ground or weather - 1-1/2".

22. PLACING CONCRETE

- A. Before placing concrete, all equipment for mixing and transporting concrete shall be cleaned, all debris and ice shall be removed from places to be occupied by concrete, forms shall be thoroughly oiled and all reinforcement cleaned of ice or other coatings. Water shall be removed from place of deposit before concrete is placed.
- B. Concrete shall be conveyed from the mixer to the place of final deposit by methods which will prevent the separation or loss of the materials. Equipment for chuting, pumping or pneumatically conveying concrete shall be of such size and design as to insure a practically continuous flow of concrete at the delivery and without separation of the materials.
- C. Concrete shall be deposited as nearly as practicable in its final position to avoid segregation due to rehandling or flowing. The concreting shall be carried on at such a rate that the concrete is at all times plastic and flows readily into the space between the bars. No concrete that has partially hardened or been contaminated by foreign matter shall be deposited on the work nor shall retempered concrete be used.

When concreting is once started, it shall be carried on as a continuous operation until the placing of the panel or section is completed. The top surface shall be generally level. Place concrete in approximately horizontal layers, avoiding displacement of reinforcement above fresh concrete and formation of seams and planes of weakness in sections.

- D. Place concrete in layers not over 30" deep; compact each layer by mechanical internal vibrating equipment supplemented by handspading, rodding, tamping, as directed. Do not use vibrators to transport concrete inside forms. Use of form vibrators is not permitted.

Limit vibration to time necessary to produce satisfactory consolidation without causing objectionable segregation. Do not insert vibrator into lower courses that have begun to set.

- E. Adequate equipment shall be provided for heating the concrete materials and protecting the concrete during freezing or near-freezing weather. No frozen materials or materials containing ice shall be used.

All concrete materials and all reinforcement, forms, fillers and earth with which the concrete is to come in contact shall be free from frost.

Whenever the temperature of the surrounding air is below 40 Degrees F. all concrete placed in the forms shall have a temperature of between 50 Degrees F. and 70 Degrees F., and adequate means shall be provided for maintaining a temperature of not less than 70 Degrees F. for three (3) days or 50 Degrees F. for five (5) days. The housing covering or other protection used in connection with curing shall remain in place and intact for at least 24 hours after the artificial heating is discontinued. No dependence shall be placed on salt or other chemical for the prevention of freezing.

- F. Before concrete is placed, contractor must obtain Engineer's approval of forms, position and securing of reinforcement.
- G. Immediately after placing or finishing, protect concrete surfaces not covered by forms from loss of surface moisture. Keep all concrete in a moist condition for at least five (5) days after placement. Curing compounds may be used upon approval of the Engineer.

23. CONCRETE PATCHING

Immediately after stripping form work, patch minor defective, honeycombed areas; fill holes before concrete is thoroughly dry. Chip areas away to a minimum one inch (1") depth in solid concrete with edges regular, perpendicular to surface. Thoroughly wet the areas to be patched including areas at least six inches (6") wide entirely surrounding it just prior to placing patching mortar.

Fill tie holes left by withdrawal of rods or holes left by removal of ends of ties solidly with mortar. For holes passing entirely through walls, use plunger type grease gun or other device to force mortar through wall starting at back face. Hold cloth over hole on outside; when hole is filled completely, strike off excess mortar with cloth flush with surface. Fill holes not passing entirely through walls with tool that will permit filling holes solidly with mortar. Strike off with cloth, any excess mortar at wall surface.

24. SURFACE FINISH

Exposed concrete surfaces: Obtain smooth finish on exposed surfaces with plywood forms or form linings; use larger sheets with smooth, even edges; install with close joints. Smooth all joint marks, remove blemishes; leave finished surfaces smooth, unmarred. Conform to tolerances; no fins or offsets in surfaces exceeding 1/16"; variations in level, not to exceed 1/8" in 10'-0".

Floor finish shall be as specified on the "S" Sheets - comply with ACI 301.

25. TOLERANCES FOR CONCRETE CONSTRUCTION

A. General.-- The intent of this paragraph is to establish tolerances that are consistent with modern construction practice, yet are governed by the effect that permissible deviations will have upon the structural action or operational function of the structure. Deviations from the established lines, grades, and dimensions will be permitted to the extent set forth herein: Provided, that the Engineer reserves the right to diminish the tolerances set forth herein if such tolerances impair the structural action or operational function of a structure or portion thereof.

Where specific tolerances are not stated in these specifications or shown on the drawings for a structure, portion of a structure, or other feature of the work, permissible deviations will be interpreted conformably to the tolerances stated in this paragraph for similar work. Specific maximum or minimum tolerances shown on the drawings in connection with any dimension shall be considered as supplemental to the tolerances specified in this paragraph, and shall govern. The contractor shall be responsible for setting and maintaining concrete forms within the tolerance limits necessary to insure that the completed work will be within the tolerances specified. Concrete work that exceeds the tolerance limits specified in these specifications or shown on the drawings shall be remedied or removed and replaced at the expense of and by the Contractor.

B. TOLERANCES

- (1) Floors, walls and walks:
 - (a) Departure from established alignment1 inch
 - (b) Departure from established grade1/4 inch

- (c) Variation from plumb or specified batter for lines and surfaces of columns, piers, walls, and for arrises.

Exposed, in any length of 10 feet 1/4 inch
Backfilled, in any length of 10 feet1 inch

- (d) Variation from level or from grades indicated on the drawings for slabs, beams, horizontal grooves, and railing offsets

Exposed, in any length of 10 feet1/4 inch
Backfilled, in any length of 10 feet1 inch

- (2) Variation in cross-sectional dimensions of slabs, walls, beams and similar parts of the structures in (1) above

Minus1/4 inch
Plus1/2 inch

- (3) Footings:

(a) Variation of dimensions in plan	Minus1/2 inch
	Plus 2 inches

- (b) Misplacement or eccentricity
 - 2 percent of the footing width in the direction of misplacement but not more than

2 inches
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- (c) Reduction in thickness of specified thickness

5 percent
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- (4) Variation in sizes and locations of slab and wall openings
- | | |
|--|---------------|
| |1/2 inch |
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- (5) Variation from plumb of pipe erected vertically.
 - In any length of 10 feet
- | | |
|--|---------------|
| |1/2 inch |
|--|---------------|

C. TOLERANCES FOR PLACING REINFORCING STEEL.

- (1) Reinforcing steel, all structures:

- (a) Variation of protective covering
 - With cover of 2-1/2 inches or less

1/4 inch
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- (b) Variation from indicated spacing

1 inch
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26. PROTECTION

The contractor shall protect all concrete against injury until final acceptance by the Engineer.

Fresh concrete shall be protected from damage due to rain, hail, sleet, or snow. The contractor shall provide such protection while the concrete is still plastic and whenever such precipitation, either periodic or sustaining, is imminent or occurring, as determined by the Engineer.

Immediately following the first frost in the fall, the contractor shall be prepared to protect all concrete against freezing. After the first frost, and until the mean daily temperature in the vicinity of the worksite falls below 40 Degrees F. for more than one day, the concrete shall be protected against freezing temperatures for not less than 48 hours after it is placed. After the

mean daily temperature in the vicinity of the worksite falls below 40 Degrees F. for more than one day, the concrete shall be maintained at a temperature not lower than 50 Degrees F. for at least 72 hours after it is placed.

Concrete cured with curing compound will require no additional protection from freezing if the protection at 50 Degrees F. for 72 hours is obtained by means of approved insulation in contact with the forms or concrete surfaces; otherwise, the concrete shall be protected against freezing temperatures for 72 hours immediately following 72 hours protection at 50 Degrees F. Concrete cured by water curing shall be protected against freezing temperatures for three days immediately following the 72 hours of protection at 50 Degrees F.

Discontinuance of protection against freezing temperatures shall be such that the drop in temperature of any portion of the concrete will be gradual and will not exceed 40 Degrees F. in 24 hours. After March 15, when the mean daily temperature rises above 40 Degrees F. for more than three successive days, the specified 72-hour protection at a temperature not lower than 50 Degrees F. may be discontinued for as long as the mean daily temperature remains above 40 Degrees F.; provided that the concrete shall be protected against freezing temperatures for not less than 48 hours after placement.

Where artificial heat is employed, special care shall be taken to prevent the concrete from drying. Use of unvented heaters will be permitted only when unformed surfaces of concrete adjacent to the heaters are protected for the first 24 hours from an excessive carbon dioxide atmosphere by application of curing compound.

27. CURING

- A. General. Concrete shall be cured as hereinafter specified. The contractor shall furnish all materials for curing concrete.

Concrete shall be cured either by water curing in accordance with Subparagraph b. or by application of a cure and seal compound in accordance with Subparagraph c., except as otherwise hereinafter provided.

Construction joints shall be cured by either water in accordance with Subparagraph b. or by application of a curing compound in accordance with Subparagraph c.; provided, that if curing compound is used, the compound shall be sandblasted prior to placement of concrete on the joints.

- B. Water curing. Concrete cured with water shall be kept wet for at least 14 days from the time the concrete is placed, except that such curing shall be discontinued shortly before covering with fresh concrete when the 14-day period has not been completed, allowing only sufficient time to prepare the surfaces of the previously placed concrete and bring them to a surface-dry condition, as specified; provided, that water curing of concrete may be reduced to six days during periods when the mean daily temperature in the vicinity of the worksite is less than 40 Degrees F.; provided further, that during the prescribed period of water curing, when temperatures are such that concrete surfaces may freeze, water

curing shall be temporarily discontinued. The concrete surfaces shall be kept wet by covering them with water-saturated material; by using a system of perforated pipes, mechanical sprinklers, or porous hose; or by any other approved method which will keep all surfaces to be cured continuously (not periodically) wet. Water used for curing shall meet the requirements of these specifications for water used for mixing concrete.

- C. Curing compound. Curing by this method shall be by application of a compound on concrete surfaces to form a water-retaining film on the surfaces. The curing compound shall be Kure-N-Seal by Sonneborne or equal.

The curing compound shall be mixed thoroughly and applied to the concrete surfaces by spraying on one coat to provide a continuous, uniform film over all areas, allowing the area to dry and applying a second coat. The coverage rate shall be in accordance with the manufacturer's instructions. Forms on surfaces to be cured by application of curing compound shall be removed as soon as the concrete has hardened sufficiently to prevent damage by careful form removal.

Mortar encrustations and fins on surfaces designated to receive rubbed finishes shall be removed prior to application of curing compound. The repair of all other surface imperfections shall not be made until after application of the curing compound. When curing compound is used on formed concrete surfaces, application of the curing compound shall commence immediately after the finished surface has attained a dull appearance, free from bleeding or "shine". When curing compound is to be used on formed concrete surfaces, the surfaces shall be moistened with a light spray of water immediately after the forms are removed and shall be kept wet until the surfaces will not absorb more moisture. As soon as the surface film of moisture disappears but while the surface still has a damp appearance, the curing compound shall be applied. Special care shall be taken to insure ample coverage with the compound at edges, corners, and rough spots of formed surfaces. After application of the curing compound has been completed and the coating is dry to touch, any required repair of concrete defects or gross surface imperfections shall be performed without delay. Each repair, after being finished, shall be moistened and coated with curing compound in accordance with the foregoing requirements.

Equipment for applying curing compound and the method of application shall be in accordance with manufacturer's recommendations.

- D. Cost. The cost of furnishing and applying all materials for curing concrete shall be included in the price bid in the schedule for the concrete to which the particular curing methods apply and are used.

28. FIBER REINFORCED CONCRETE

- A. Fiber reinforced concrete shall be supplied at all locations specified on the plans.
- B. All fiber reinforced concrete shall be Class "A" Concrete and shall be reinforced with synthetic fibers as manufactured by Fibermesh Co. of Chattanooga, TN at a rate of 1.5 lbs. per cubic yard.

**SECTION 05050 - ANCHOR & TOGGLE BOLTS, EXPANSION ANCHORS,
AND CONCRETE INSERTS**

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Scope:
1. CONTRACTOR shall provide all labor, materials, equipment and incidentals as shown, specified, and required to furnish and install anchor bolts, expansion anchors, toggle bolts and concrete inserts.
- B. This Section includes all bolts, anchors, toggles and inserts required for the Work but not specified under other Sections.
- C. The types of work using the bolts, anchors, toggles and inserts include, but are not limited to the following:
1. Hangers and brackets.
 2. Equipment.
 3. Piping.
 4. Grating and floor plate.
 5. Electrical, Plumbing and HVAC Work.
 6. Partitions and ceilings.
 7. Shelf angles and masonry lintels.
- D. Related Sections:
1. Section 05500, Metal Fabrications.

1.2 QUALITY ASSURANCE

- A. Reference Standards: Comply with the applicable provisions and recommendations of the following, except as otherwise shown and specified.
1. ASTM A 307, Specification for Carbon Steel Bolts and studs, 60,000 psi Tensile.
 2. ASTM A 320, Specification for Alloys-Steel Bolting Materials for Low-Temperature Service.
- B. Expansion anchors and inserts shall be UL or FM approved.
- C. Toggle Bolts: FS-FF-B-588C, Type I, Class A, Style 1.

1.3 SUBMITTALS

- A. Shop Drawings: Submit for approval the following:
1. Setting drawings and templates for location and installation of anchorage devices.
 2. Copies of manufacturer's specifications, load tables, dimension diagrams and installation instructions for the devices.

- B. Samples: Submit for approval the following:
1. Representative samples of bolts, anchors and inserts as may be requested by ENGINEER. Review will be for type and finish only. Compliance with all other requirements is exclusive responsibility of CONTRACTOR.

PART 2 - PRODUCTS

2.1 DESIGN CRITERIA

- A. When the size, length or load carrying capacity of an anchor bolt, expansion anchor, toggle bolt, or concrete insert is not shown, provide the size, length and capacity required to carry the design load times a minimum safety factor of four.
- B. Determine design loads as follows:
1. For equipment anchors, use the design load recommended by the manufacturer and approved by ENGINEER.
 2. For pipe hangers and supports, use one half the total weight of pipe, fittings, valves, accessories and water contained in pipe, between the hanger or support in question and adjacent hangers and supports on both sides.
 3. Allowances for vibration are included in the safety factor specified above.
 4. Anchors shall develop ultimate shear and pull-out loads of not less than the following values in concrete:

Bolt Diameter (Inches)	Min. Shear (Pounds)	Min. Pull-Out Load (Pounds)
1/2	4,500	6,300
5/8	6,900	7,700
3/4	10,500	9,900

2.2 MATERIALS

- A. Anchor Bolts:
1. Provide stainless steel bolts complying with ASTM A 320, AISI Type 316, non-headed type unless otherwise indicated.
 2. In buried or submerged locations, provide stainless steel bolts complete with nuts and washers complying with ASTM A 320, AISI Type 316. Other AISI types may be used subject to ENGINEER'S approval.
- B. Expansion Anchors:
1. Provide stainless steel anchors complying with ASTM A 320, AISI Type 316.
 2. Anchors shall be of the size required for the concrete strength specified. Provide stud type (male thread) or flush type (female thread), as required.
 3. Manufacturer: Provide anchors of one of the following:
 - a. Molly Division of USM Corporation.
 - b. Hilti, Incorporated.
 - c. Or equal.

4. In buried or submerged locations, provide stainless steel anchors complying with ASTM A 320, AISI Type 303. Other AISI types may be used, subject to ENGINEER'S approval.

C. Toggle Bolts:

1. Provide spring-wing toggle bolts, with two-piece wings.
2. Provide carbon steel bolts with zinc coating in accordance with FS-QQ-Z-325.
3. Manufacturer: Provide toggle bolts of one of the following:
 - a. U.S.E. Diamond, Incorporated.
 - b. Haydon Bolts, Incorporated.
 - c. Or equal.

D. Concrete Inserts:

1. For piping, grating, floor plate and masonry lintels, provide malleable iron inserts. Provide those recommended by the manufacturer for the required loading.
2. Finish shall be black.
3. Product and Manufacturer: Provide one of the following:
 - a. Figure 282, as manufactured by ITT Grinnell.
 - b. No. 380, as manufactured by Hohmann and Barnard, Incorporated.
 - c. Or equal.

- E. Powder actuated fasteners and other types of bolts and fasteners not specified herein shall not be used unless approved by ENGINEER.

PART 3 - EXECUTION

3.1 INSPECTION

- A. CONTRACTOR shall examine areas and conditions under which anchor bolts, expansion anchors, toggle bolts and concrete insert Work is to be installed, and notify ENGINEER of conditions detrimental to proper and timely completion of Work. Do not proceed with Work until unsatisfactory conditions have been corrected in a manner acceptable to ENGINEER.

3.2 INSTALLATION

- A. Drilling equipment used and installation of expansion anchors shall be in accordance with manufacturer's instructions.
- B. Assure that embedded items are protected from damage and are not filled in with concrete.
- C. Expansion anchors may be used for hanging or supporting pipe 2 inches diameter and smaller. Expansion anchors shall not be used for larger pipe unless otherwise shown or approved by ENGINEER.
- D. Use concrete inserts for pipe hangers and supports for the pipe size and loading recommended by the insert manufacturer.

- E. Use toggle bolts for fastening brackets and other elements onto masonry units.
- F. Unless otherwise shown or approved by ENGINEER conform to following for expansion anchors:
 - 1. Minimum embedment depth in concrete: 5 diameters.
 - 2. Minimum anchor spacing on centers: 10 diameters.
 - 3. Minimum distance to edge of concrete: 5 diameters.
 - 4. Increase dimensions above if required to develop the required anchor load capacity.

3.3 CLEANING

- A. After embedding concrete is placed, remove protection and clean bolts and inserts.

SECTION 05320 - METAL ROOF DECK

PART 1 - GENERAL

1.1. DESCRIPTION

- A. Work included: provide a metal roof deck over existing steel bar joists complete with all miscellaneous accessories where shown on the Drawings, specified herein or as needed for a complete and proper installation.
- B. Related Work:
 - 1. Documents affecting work of this section include, but are not limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
 - Section 05500 - Metal Fabrications
 - Section 07210 - Building Insulation

1.2. QUALITY ASSURANCE

- A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.
- B. Perform all installation and erection required in connection with the work of this Section in strict accordance with pertinent recommendations of the manufacturer and approved by the Architect.

1.3. SUBMITTALS

- A. Product data: Within 35 calendar days after the Contractor has received the Owner's Notice to Proceed, submit:
 - 1. Materials list of items proposed to be provided under this Section;
 - 2. Manufacturer's specifications and other data needed to prove compliance with the specified requirements;
 - 3. Shop Drawings in sufficient detail to show fabrication, installation, anchorage, and interface of the work of this Section with the work of adjacent trades;
 - 4. Manufacturer's recommended installation procedures which, when approved by the Architect, will become the basis for accepting or rejecting actual installation procedures used on the Work.

PART 2 - PRODUCTS

2.1. METAL ROOF DECK UNITS

- A. Design:
 - 1. Design the units in accordance with AISC "Specification for Design of Light Gage Cold-Formed Steel Structural Members".

2. Provide for a maximum steel fiber stress of 20,000 psi.
3. Provide that live load deflection does not exceed $L/240$ of the span.

B. Properties:

1. Form from galvanized steel sheets complying with ASTM A446, with a minimum yield strength of 33,000 psi, and coat in accordance with ASTM A525, designation G60.
2. Provide for the pattern shown on the Drawings.

C. Acceptable products:

1. Metal Roof Deck
 - a. Vulcraft Type 1.5B 24 Ga. (match existing)

2.2. ACCESSORIES

- A. Provide accessories specifically designed to be used with the metal deck units supplied to the Work, and as normal to the uses shown on the Drawings including, but not necessarily limited to, ridge and valley plates, closures, cant strips, and sump pans, if required.
- B. Provide other materials not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the approval of the Architect.

PART 3 - EXECUTION

3.1. SURFACE CONDITIONS

- A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.2. INSTALLATION

- A. Prior to start of installation, verify that beams are in proper alignment and that surfaces are clean for welding.
- B. Place each unit on the supporting steel framework, and adjust to final position prior to permanent welding.
 1. Fasten panels to each structural support by self tapping fasteners spaced 12" on center, with three fasteners for each 30" wide panel.
 2. Fasten sheet metal accessories by tack welding or screwing at 3'0" on center.
 3. Weld sump pans, when required, directly to the deck at 6" on center around the perimeter of the pan.

4. Button-punch panels together if so indicated on the Drawings, recommended by the manufacturer, or required by governmental agencies having jurisdiction.
- C. Complete installation in accordance with the manufacturer's recommendations as approved by the Architect.
- 3.3. TOUCH-UP
- A. Upon completion of installation, and as a condition of its acceptance, visually inspect each item installed under this Section and locate surfaces where finish was damaged.
1. Touch-up galvanized surfaces with zinc-rich primer or other galvanize repair paint approved for the purpose by the Architect.
 2. Touch-up other damaged surfaces as required to return the surfaces to condition commensurate with the services required.

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SECTION 05500 - METAL FABRICATIONS

PART 1 - GENERAL

1.1. DESCRIPTION

- A. Work included: provide miscellaneous metal work shown on the Drawings, as specified herein, and as needed for a complete and proper installation.
- B. Related work:
 - 1. Documents affecting work of this section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

1.2. QUALITY ASSURANCE

- A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.
- B. Perform shop and/or field welding required in connection with the work of this Section in strict accordance with pertinent recommendations of the American Welding Society.

1.3. SUBMITTALS

- A. Product data: Within 35 calendar days after the Contractor has received the Owner's Notice to Proceed, submit:
 - 1. Materials list of items proposed to be provided under this Section;
 - 2. Manufacturer's specifications and other data needed to prove compliance with the specified requirements;
 - 3. Shop Drawings in sufficient detail to show fabrication, installation, anchorage, and interface of the work of this Section with the work of adjacent trades;
 - 4. Manufacturer's recommended installation procedures which, when approved by the Architect, will become the basis for accepting or rejecting actual installation procedures used on the Work.

PART 2 - PRODUCTS

2.1. MATERIALS

- A. In fabricating items which will be exposed to view, limit materials to those which are free from surface blemishes, pitting, rolled trade names, and roughness.
- B. Comply with following standards, as pertinent.
 - 1. Steel plates, shapes, and bars: ASTM A36.
 - 2. Steel tubing: cold-formed, ASTM A500; or hot rolled, ASTM A501.

3. Structural steel sheet: hot rolled, ASTM A570; or cold rolled ASTM A611, Class 1; of grade required for design loading.
4. Steel pipe: ASTM A53, Type and grade (if applicable) as selected by fabricator and as required for design loading; black finish unless galvanizing is indicated; standard weight (Schedule 40), unless otherwise indicated.
5. Brackets, Flanges and Anchors: Cast or formed metal of the same type material and finish as supported rails, unless otherwise indicated.
6. Concrete inserts:
 - a. Threaded or wedge type galvanized ferrous castings of either of malleable iron, ASTM A47; or cast steel, ASTM A27.
 - b. Provide required bolts, shims, and washers, hot-dip galvanized in accordance with ASTM A153.
7. Loose lintels. Furnish all required loose lintels which are supported on masonry and carrying masonry over openings under this section for installation under Section 04200, 'Unit Masonry'. Provide a minimum of 8-inches of bearing at each end of all steel lintels. All lintels shall be painted as specified.

2.2. FASTENERS

A. General:

1. For exterior use and where built into exterior walls, provide zinc-coated fasteners.
2. Provide fasteners of type, grade, and class required for the particular use.

B. Comply with following standards as pertinent.

1. Bolts and nuts: Provide hexagon-head regular type complying with ASTM A307, grade A;
2. Lag bolts: Provide square-head type complying with Fed Spec FF-B-561;
3. Machine screws: Provide cadmium plated steel type complying with Fed Spec FF-S-111;
4. Washers:
 - a. Plain washers: Comply with Fed Spec FF-W-92, round, carbon steel;
 - b. Lock washers: Comply with Fed Spec FF-W-84, helical spring type carbon steel;
5. Toggle bolts: Provide type, class, and style needed but complying with Fed Spec FF-B-588;
6. Anchorage devices: Provide expansion shield complying with Fed Spec FF-S-325.

2.3. OTHER MATERIALS

- A. Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the approval of the Architect.

2.4. SHOP PAINT

- A. None - see Paragraph 3.4., B. Coatings/Painting of this section for overhead structure and Section 09900 for all other metal painting.

2.5. FABRICATION

- A. Except as otherwise shown on the Drawings or the approved Shop Drawings, use materials of size, thickness, and type required to produce reasonable strength and durability in the work of this Section.
- B. Fabricate with accurate angles and surfaces which are true to the required lines and levels, grinding exposed welds smooth and flush, forming exposed connections with hairline joints, and using concealed fasteners wherever possible.
- C. Prior to shop painting or priming, properly clean metal surfaces as required for the applied finish and for the proposed use of the item.
- D. On surfaces inaccessible after assembly or erection, apply two coats of the specified primer. Change color of second coat to distinguish it from the first.

PART 3 - EXECUTION

3.1. SURFACE CONDITIONS

- A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.2. COORDINATION

- A. Coordinate as required with other trades to assure proper and adequate provision in the work of those trades for interface with the work of this Section.

3.3. INSTALLATION

- A. General:
 - 1. Set work accurately into position, plumb, level, true, and free from rack.
 - 2. Anchor firmly into position.
 - 3. Where field welding is required, comply with AWS recommended procedures of manual-shielded metal-arc welding for appearance and quality of weld and for methods to be used in correcting welding work.
 - 4. Grind exposed welds smooth, and touchup shop prime coats.
 - 5. Do not cut, weld, or abrade surfaces which have been hot-dip galvanized after fabrication and which are intended for bolted or screwed field connections.
- B. Immediately after erection, clean the field welds, bolted connections, and abraded areas of shop priming. Paint the exposed areas with same material used for shop priming.

3.4. CORROSIVE ENVIRONMENTS

- A. Where fabrications are subject to corrosive environment the following practices shall be followed:
 - 1. All connections to be welded unless fabricator obtains approval by the Engineer/Architect for alternate designs. Approval will only be given if suitable means of protecting the metal in crevices can be demonstrated.
 - 2. Weld all around all pieces. No skip welds are allowed.
 - 3. Remove all weld splatter.

- B. Coatings/Painting
 - 1. Prepare surfaces for coating in accordance with drawings, specifications or manufacturer's recommendations.
 - 2. Apply coatings per manufacturer's recommendations.
 - 3. Field apply one coat Red Oxide Primer at all welded joints.
 - 4. Field apply two coats DTM Alkyd Enamel.

SECTION 06100 - ROUGH CARPENTRY

PART 1 - GENERAL

1.1. DESCRIPTION

- A. Work included: Provide wood, nails, bolts, screws, framing anchors and other rough hardware, and other items needed, and perform rough carpentry for the construction shown on the Drawings, as specified herein, and as needed for a complete and proper installation.
- B. Related work: Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

1.2. QUALITY ASSURANCE

- A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.
- B. Codes and standards:
 - 1. In addition to complying with the pertinent codes and regulations of governmental agencies having jurisdiction, unless otherwise specifically directed or permitted by the Architect comply with:
 - a. "Product Use Manual" of the Western Wood Products Association for selection and use of products included in that manual;
 - b. "Plywood Specification and Grade Guide" of the American Plywood Association.
 - c. "Standard Specifications for Grades of California Redwood Lumber" of the Redwood Inspection Bureau for Redwood, when used.

1.3. PRODUCT HANDLING

- A. Protection:
 - 1. Deliver the materials to the job site and store in a safe area, out of the way of traffic, and shored up off the ground surface.
 - 2. Identify framing lumber as to grades, and store each grade separately from other grades.
 - 3. Protect metals with adequate waterproof outer wrapping.
 - 4. Use extreme care in off loading of lumber to prevent damage, splitting, and breaking of materials.

PART 2 - PRODUCTS

2.1. GRADE STAMPS

- A. Identify framing lumber by the grade stamp of the West Coast Lumber Inspection Bureau, or such other grade stamp as is approved in advance by the Architect.
- B. Identify OSB as to species, grade, and glue type by the stamp of the American Plywood Association.
- C. Identify other materials of this Section by the appropriate stamp of the agency approved in advance by the Architect.

2.2. MATERIALS

- A. Provide materials in the quantities needed for the Work shown on the Drawings, and meeting or exceeding the following standards of quality:
 - 1. Horizontal framing members: Douglas Fir-Hemlock, Table 1, Construction Grade.
 - 2. Vertical framing members: Douglas Fir-Hemlock, Table 1, Standard Grade.
 - 3. Headers, Beams and Stringers: Douglas Fir-Hemlock, Table 1, No. 1.
 - 4. OSB
 - a. Exterior Sheathing: 7/16" thick, rated sheathing 24/16 EXP 1.
 - 5. Building paper: Kraft paper complying with Fed Spec UU-B-790a.
 - 6. Wood preservative: Ammoniacal copper arsenite, or 5% solution of pentachlorophenol.
 - 7. Rough hardware:
 - a. Steel items:
 - (1) Comply with ASTM A7 or ASTM A36.
 - (2) Use galvanized at exterior locations.
 - b. Machine bolts: Comply with ASTM A307.
 - c. Lag bolts: Comply with Fed. Spec. FF-B-561.
 - d. Nails:
 - (1) Use common except as otherwise noted.
 - (2) Comply with Fed. Spec. FF-N-1.
 - (3) Use galvanized at exterior locations.

2.3. OTHER MATERIALS

- A. Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the approval of the Architect.

PART 3 - EXECUTION

3.1. SURFACE CONDITIONS

- A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.2. DELIVERIES

- A. Stockpile materials sufficiently in advance of need to assure their availability in a timely manner for this Work.
- B. Make as many trips to the job site as are needed to deliver materials of this Section in a timely manner to ensure orderly progress of the Work.

3.3. COMPLIANCE

- A. Do not permit materials not complying with the provisions of this Section to be brought onto or to be stored at the job site.
- B. Promptly remove non-complying materials from the job site and replace with materials meeting the requirements of this Section.

3.4. WORKMANSHIP

- A. Produce joints which are tight, true, and well nailed, with members assembled in accordance with the Drawings and with pertinent codes and regulations.
- B. Selection of lumber pieces:
 - 1. Carefully select the members.
 - 2. Select individual pieces so that knots and obvious defects will not interfere with placing bolts or proper nailing, and will allow making of proper connections.
 - 3. Cut out and discard defects which render a piece unable to serve its intended function.
 - 4. Lumber may be rejected by the Architect, whether or not it has been installed, for excessive warp, twist, bow, crook, mildew, fungus, or mold, as well as for improper cutting and fitting.
- C. Do not shim any framing component.

3.5. GENERAL FRAMING

- A. General:
 - 1. In addition to framing operations normal to the fabrication and erection indicated on the Drawings, install wood blocking and backing required for the work of other trades.
 - 2. Set horizontal and sloped members with crown up.
 - 3. Do not notch, cut, or bore members for pipes, ducts, or conduits, or for other reasons except as shown on the Drawings or as specifically approved in advance by the Architect.

3.6. ALIGNMENT

- A. On framing members to receive a finished surface, align the finish subsurface to vary not more than 1/8" from the plane of surfaces of adjacent furring and framing members.

3.7. FASTENING

A. Nailing:

1. Use only common wire nails or spikes of the dimension shown on the Nailing Schedule, except where otherwise specifically noted on the Drawings.
2. For conditions not covered in the Nailing Schedule provide penetration into the piece receiving the point of not less than 1/2 the length of the nail or spike, provided, however, that 16d nails may be used to connect two pieces of 2" (nominal) thickness.
3. Nail without splitting wood.
4. Prebore as required.
5. Remove split members and replace with members complying with the specified requirements.

B. Bolting:

1. Drill holes 1/16" larger in diameter than the bolts being used.
2. Drill straight and true from one side only.
3. Do not bear bolt threads on wood, but use washers under head and nut where both bear on wood, and use washers under all nuts.

C. Screws:

1. For lag screws and wood screws, prebore holes same diameter as root of threads, enlarging holes to shank diameter for length of shank.

SECTION 07210 - BUILDING INSULATION

PART 1 - GENERAL

1.1. DESCRIPTION

- A. Work included: Provide building insulation where shown on the Drawings, as specified herein, and as needed for a complete and proper installation.
- B. Related work: Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

1.2. QUALITY ASSURANCE

- A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.
- B. Upon completion of this portion of the Work, complete and post a certificate of insulation compliance in accordance with pertinent requirements of governmental agencies having jurisdiction.

PART 2 - PRODUCTS

2.1. MATERIALS

- A. Provide the following building insulation where shown on the Drawings or otherwise needed to achieve the degree of insulation required under pertinent regulations of governmental agencies having jurisdiction.
 - 1. Roof: Match type and thickness with existing roof insulation.
 - 2. Wall: Provide fiberglass insulation system with Kraft paper facing. Thickness shall fill the wall.

2.2. OTHER MATERIALS

- A. Provide other materials not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the approval of the Architect.

PART 3 - EXECUTION

3.1. SURFACE CONDITIONS

- A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

- B. Remove, or protect against, projections in construction framing which may damage or prevent proper insulation.

3.2. INSTALLATION

- A. Install the work of this Section in strict accordance with the original design, requirements of governmental agencies having jurisdiction, and the manufacturer's recommended installation procedures as approved by the Architect, anchoring all components firmly into position.

SECTION 07501 – EXISTING MEMBRANE ROOFING

A. GENERAL

1. This section covers the requirements for installation of new equipment or other work requiring access to cutting and patching of the existing single ply membrane roof system.
2. Existing System. The existing system is a 45 mil ballasted single ply system (Field Verified) as installed by:
Weathercraft Roofing Co.
71587 Road 388
McCook, NE 69001
308-345-6670

B. INSTALLATION.

1. All work shall be done in accordance with the warranty requirements. Failure to do so will **VOID THE WARRANTY**. Contact Weathercraft Roofing or other licensed Firestone installers and coordinate with them the work for installation of new rooftop HVAC Equipment and all related items on the existing single ply membrane roof system.

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SECTION 15010 - MECHANICAL

GENERAL

1. Scope

The General Conditions and Special Conditions shall be considered a part of this Section. The work covered by this section of the specifications consists in furnishing all labor, equipment, supplies and materials (except as otherwise specified herein or noted on the drawings) and in performing all operations necessary for the installation of complete systems in strict accordance with this section of the specifications and the applicable drawings, and subject to the terms and conditions of the Contract.

2. Materials and Workmanship

Unless otherwise approved in writing, all materials furnished under this specification shall be new and shall be a standard product of manufacturers regularly engaged in the production of such equipment and shall be the manufacturer's latest standard design. All work shall be done by experienced mechanics in accordance with first class standard practice and shall be complete to perform the intended function and shall be neat in appearance.

3. Coordination of Work

The Contractor shall coordinate his work with all other Contractors and trades involved in order to prevent conflicts causing unnecessary expense or delay in the installation of work under other contracts. Where conflicts arise due to negligence on the part of the Contractor, he shall remove and relocate any piping, ductwork, equipment, etc., causing such conflict, including all costs in connection therewith.

4. Responsibility

Any reference to work to be done under this Contract means that this Contractor is responsible for getting the work done, in a first class condition by competent craftsmen, and all costs in connection therewith.

5. "As-Built" Drawings

The Contractor shall furnish the Architect-Engineer, upon completion of the job, two (2) copies of "As-Built" Drawings. These drawings shall show the correct location of equipment, piping, ductwork, etc.

6. Rough-In

All piping and rough-in is to be concealed, except where otherwise shown. Provide steel pipe sleeves for all pipes passing through floors and walls. Sleeves through floors shall extend 2" above floor except where pipe is exposed and in a finished area. Pipe sleeves shall be furnished

and set by this Contractor and he shall be responsible for their proper and permanent location. Pipes through the roof shall be flashed.

7. Plates

In finished areas pipes passing through the floors or walls, shall be provided with chrome plated hinged escutcheon plates, unless otherwise specified.

8. Access Doors

Access doors shall be furnished and installed by General Contractor.

9. Operating Instructions

Two (2) sets of printed instructions covering the operation and maintenance of each item of equipment shall be supplied to the Owner, or his representative. The Owner or his representative shall be instructed in procedures of operation by this Contractor.

10. Cleaning

The Contractor shall keep the premises broom clean at all times from foreign materials created under this Contract and provide tarpaulins to protect all finished surfaces and equipment. Extreme caution shall be exercised to prevent damage to existing equipment, furniture, etc. during construction.

11. Scaffolding and Hoisting

All scaffolding and hoisting required shall be furnished and set by this Contractor.

12. Cutting and Patching

All cutting and patching for work covered by this division shall be done by this Contractor. Work to be done by craftsmen skilled in their respective trades. When cutting is required, it shall be done in such a manner as not to weaken walls, partitions, or floors and holes required to be cut in floors must be drilled without breaking out around the holes. No openings shall be cut before approval of Architect-Engineer.

13. Curbs

Curbs for roof openings shall be constructed by the General Contractor in accordance with the requirements of the fans, ducts, etc. This Contractor shall be responsible to the General Contractor as to locations, size, etc., of openings required for this Contractor's work. (This Contractor shall furnish and install pre-fab curb when specified.)

14. Concrete Pads

Concrete pads for equipment shall be furnished by the General Contractor in accordance with the requirements of the equipment. This Contractor shall provide necessary information, foundation bolts, inserts, and sole plates as required. Exact location and size of all equipment concrete pads shall be determined by Mechanical Contractor.

15. Electrical Equipment Connections

A. The Mechanical Contractor shall furnish all equipment pertaining to his work, including motors, relays, temperature and pressure control devices, electrically operated valves and dampers and other control and protective devices. Motor starters, except in prewired units, starting devices and disconnect switches shall be furnished and installed by the Electrical Contractor.

B. The Mechanical Contractor shall install all mechanical equipment. The Electrical Contractor will wire all equipment except for low voltage control circuits required for the mechanical equipment (e.g. thermostats). The Electrical Contractor will supply and install all conduit required.

C. The Mechanical Contractor shall set all motors pertaining to his work.

D. Wiring shall be in accordance with the drawings and specifications and per approved wiring diagrams, which will be submitted by the Mechanical Contractor.

16. Inspection and Tests

The Contractor shall make the necessary tests at his own expense in the presence of the Architect-Engineer or his representative, and any other agencies as required by local ordinances, regulations, codes, etc.

Such inspections, tests, etc. shall not relieve the Contractor of the responsibility of furnishing equipment and materials that meet the performance and requirements of this specification.

17. Guaranty

The Contractor shall guarantee the installation against defects in materials, workmanship and proper system balance for a period of one year from the date of final acceptance.

The Contractor shall repair or replace immediately any part that may become defective during the above period without additional cost to the Owner.

PLUMBING

1. Applicable Standards and Specifications

All plumbing work, equipment and apparatus shall be in conformity with the applicable provisions of the local and state plumbing codes, municipal and statutory requirements and other codes or laboratory reports hereafter specified.

2. Pipes and Fittings

A. Interior Soil and Waste Above Ground

All lines shall be standard galvanized steel pipe and standard cast iron drainage fittings. At Contractor's option, (if local Code permits) Schedule 40 PVC pipe and fittings may be used.

B. Chilled and Heating Water

All lines shall be Type L Copper, Fittings shall be wrought copper. Field verify existing pipe material.

C. Vent Piping Above Ground

All lines shall be standard galvanized steel pipe and standard pattern cast iron fittings. At Contractor's option, (if local Code permits) Schedule 40 PVC pipe and fittings may be used.

3. Pipe Installation

- A. General. Ends of pipe shall be reamed and all burs removed before installation. Vertical risers shall be plumb and straight. Horizontal lines shall be parallel to walls and partitions. Piping shall be concealed where possible. Pipe openings shall be closed with caps or plugs when work is not in progress.

Hangers shall be adjustable pipe hanger rings Fee & Mason Fig. 215, or approved equal. Horizontal runs of cast iron bell and spigot pipe shall be supported at approximately 8 foot centers and in no case at greater than 10 foot centers. Vertical runs of pipe shall be supported at every floor, or at intervals not to exceed 20 foot with Fee & Mason Fig. 241 riser clamps or collars.

Provide steel headers between concrete or steel construction where required for hanging pipe. On copper pipe use Fig. 361, copper-plated adjustable hangers.

- B. Soil Waste Piping. All horizontal piping shall be installed with a uniform grade (free from sag) of 1/4" per foot where possible and in no case less than 1/8" per foot, unless specifically called out to the contrary on the drawings. Pipe shall be laid with hub end

upstream and supported on firm ground on masonry supports. Install storm drain outside building with grades and slope as indicated on drawings. Insulate per paragraph 9.

C. Vent Piping. Vent lines shall be as indicated on the drawings and/or as required by the local Plumbing Code.

D. Hot and Cold Water Piping

1. All lines shall be installed in such a way as to drain completely without traps or pockets.
2. Suitable provisions shall be made to allow for expansion and contraction of pipes.
3. Air chambers shall be provided on all hot and cold water supplies near each faucet, flush valve or control valves and shall consist of a 12 inch length of pipe with cap of the same diameter as the branch supply.
4. All unions shall be of the ground joint type.
5. Provide "EPCO" Dielectric fittings, or approved equal, between dissimilar metals such as copper or brass and steel or iron.
6. Insulate per paragraph 9.

E. Joints

1. Cast Iron Pipe. Neoprene gasket compression-type joints shall be used.
2. Threaded Pipe. Teflon joint wrapping tape shall be applied to all male threads on steel pipe.
3. Black Steel Pipe (Gas and Air). "Rector Seal" shall be used at all joints or as recommended by the gas company.
4. Copper Pipe. All joints shall be made by soldering with 95-5 solder.
5. Polyvinyl Chloride Pipe. All joints shall be solvent welded per pipe and fitting manufacturers recommendations.

F. Valves

1. Valves shall be provided on all supplies to fixtures as specified under Fixtures. The contractor shall furnish and install valves for water, air and gas lines as indicated on the drawings or as specified. All valves shall be the product of one manufacturer unless otherwise noted, and shall be suitable for the service intended. All valves shall be installed with their stems not lower than horizontal.

The valves listed are those manufactured by the Mueller Valve Company, Crane Company, and the Nordstrom Company. Equivalent products of Ohio Brass, Walworth, Jenkins or Lunkenheimer are acceptable.

2. Plug Valves For Gas, Air And Water Lines Up To And Including 3". Shall have a working pressure of 200 lbs. on W.O.G., use Nordstrom #114 screwed with adapters to sweated fittings. Provide insulating type bushings or fiber or plastic on both sides of valve when used in copper lines.
3. Plug Valves for Gas, Air And Water Lines Over 3". Shall have a working pressure of 200 lbs. on W.O.G., use Nordstrom #165.

4. Tests for Plumbing System:

- A. All soil, waste, vent, chilled/heating water piping shall be tested by the Contractor to the Architect-Engineers satisfaction before concealing. All equipment required for tests shall be furnished by the Contractor without additional cost to the owner. The contractor shall notify the Architect-Engineer two days in advance of test. Test shall be made with water or air as indicated by the type of system and the weather conditions and/or as directed by the Architect/Engineer. Potable water shall be used for all water tests.
- B. Drainage System (Including Soil, Vent).
 1. Water Test. The entire system shall be filled with water to the level of the highest vent stack above the roof or highest roof drain. The pressure shall remain constant for 20 minutes without any further addition of water. Portions of the system shall be tested in the same manner except that a vertical stack 10 feet above the highest horizontal line to be tested shall be installed and filled with water to maintain pressure.
 2. Air Test. Close all inlets and outlets and fill system with air pressure of 10 psig and maintain pressure for 20 minutes. Apply soapy water to joints to determine leaks.
- C. Chilled/Heating System (Including Hot and Cold Water).
 1. Air Test. Field verify existing system pressure. Fill system with air at the existing system pressure and maintain pressure for 20 minutes.

5. Excavation and Backfill:

- A. The Contractor shall perform all excavation necessary for the installation of the work included in this Section of the specifications, regardless of the type of material encountered.
- B. Trenches shall be uniformly graded and the bottom shall be free of stones and soft spots.

- C. The piping system shall be tested and accepted before backfilling.
- D. Excess excavated material shall be removed from the premises or disposed of as directed by the Architect/Engineer.

6. Flashing:

- A. Openings in roofs for vent pipes shall be fitted with roof jacks compatible with the roof system and shall be approved by the Architect/Engineer prior to installation.

7. Cleaning of System:

- A. All equipment and piping shall be thoroughly cleaned of iron cuttings and other refuse during assembly and installation.
- B. When installation is complete, all lines shall be thoroughly flushed.

8. Adjustment:

- A. Automatic control devices shall be adjusted for proper operation.
- B. Defective work shall be replaced with new material.
- C. Water lines shall have free circulation of water without noise or hammer.

9. Insulation:

- A. Insulate all heating water lines with 2" thick Owens-Corning Snap-On Fiberglass, sectional pipe covering with an all purpose jacket. The joints shall be butted together tightly. Insulate all fittings, valves, etc., in covered lines to the same diameter as pipe covering with a compatible material and finish with rigid plastic jacket. Surfaces shall be clean and dry before insulating.
- B. Insulate all chilled water lines and interior storm drain with same as (A) above, except the insulation shall be installed with factory applied vapor barrier.

11. Plumbing Fixtures:

See Schedule on Drawings.

12. HEATING, VENTILATING & AIR CONDITIONING

1. Description of System, Applicable Standards and Specifications:

A. The system consists of Rooftop and Air Handler with chilled water and heating water coils and chiller. This Contractor shall provide rooftop air handlers and chiller, controls and all

labor and materials incidental to a complete heating, ventilating and air conditioning system as described and/or shown on the Plans.

All heating, ventilating and air conditioning work, equipment and apparatus shall be in conformity with the applicable provisions of the National Board of Fire Underwriters, Underwriters Laboratories, Inc., Municipal and Statutory requirements and other standard codes or laboratory reports hereafter specified. (All work shall be in accordance with state and local codes.)

The new chiller shall be supplied with hail guard provided by the equipment manufacturer.

When mechanical specifications and drawings do not agree with local building ordinances, the Architect-Engineer shall be notified.

2. Low Pressure Ductwork:

A. General

1. The Contractor shall furnish and install a complete ductwork system as shown on Plans and hereinafter specified.

2. All ductwork shall be neat, accurate, mechanically tight and rigidly constructed. All uninsulated panels wider than 12 inches shall be crossbroken. Turning vanes shall be supplied for all abrupt changes in ductwork. Horizontal runs shall be supported by strap type hangers so ducts are without sag or sway, maximum of 8'-0" on centers. Ductwork shall be constructed according to latest edition of Duct Manual and Sheet Metal Construction for Ventilating and Air Conditioning Systems.

3. Sizes of ductwork shown on the Plans are sheet metal duct dimensions and where ductwork is acoustically lined or insulated with inside duct liner, the ductwork shall be oversized accordingly.

B. Quality and Gauges of Metal

1. Ductwork shall be constructed of new sheets of galvanized steel. Longitudinal seams of rectangular ductwork shall be either Pittsburgh Lock, double or grooved. Longitudinal seams of round duct shall be grooved.

2. Gauges shall be not less than those shown on Table below:

Rectangular Minimum Dimension	Steel U.S. Standard Gauge	Gal. Iron Bracing
0" - 12"	26	
12" - 18"	24	
19" - 30"	24	1 x 1 x 1/8 angle 4'-0"
31" - 40"	22	1 x 1 x 1/8 angle 4'-0"
41" - 54"	22	1-1/2 x 1-1/2 x 1/8 angle 4'-0"
55" - 84"	20	1-1/2 x 1-1/2 x 1/8 angle 4'-0"

Round Minimum Diameter	Steel U.S. Standard Gauge
0" - 8"	26
9" - 22"	24
23" - 36"	22
37" - 48"	20

C. Dampers. Manual volume and splitter dampers shall be furnished and installed where indicated on the drawings and/or as required to provide a complete balancing of all duct mains, zones, branches, etc., to guarantee the design CFM specified. Manual volume dampers shall be a manufactured product, Minneapolis-Honeywell, or approved equal, opposed action type, unless otherwise noted. Splitter dampers may be made by the sheet metal Contractor of not less than 16 gauge galvanized iron and/or two gauges heavier than the duct in which they are installed. Provide Young Levertype Valcolex #403 on exposed ductwork or above lift-out ceiling panels and Young concealed regular #314 with adjustable cover for use in acoustical or plastered ceilings.

D. Registers, Diffusers and Grilles. Registers, diffusers and grilles shall be installed where shown on the drawings and shall be of the air conditioning type. They shall have a net free area in excess of 60 percent and shall be complete with volume control. See Register, Diffuser and Grille Schedule on the Drawings. Coordinate all work with other Contractors.

E. Weather Louvers. Exterior weather louvers shall be furnished where shown on the drawings. Louvers shall be constructed of not less than 18 gauge galvanized steel and fastened in a steel frame, and shall have 1/2" mesh galvanized bird screen installed behind the louver. The Contractor shall deliver framing boxes for weather louvers in due time and be responsible for the exact location.

F. Insulation. Supply, Return and Outside Air Ducts shall be insulated with 2" thick 1-1/2 lb. per cu. ft. density fiberglass insulation with vapor barrier. All joints in the insulation shall be firmly butted and tightly sealed with adhesive. For forced air heating and cooling systems less than 5 ton (i.e. residential type split systems) interior above grade supply and return ducts may be insulated with a 1/2" duct liner system. All duct sizes must be adjusted to maintain 0.1" wg friction loss per 100' on the supplies and 0.08" wg friction loss on the returns.

G. Cleaning of System.

1. All equipment, ductwork and piping shall be thoroughly cleaned of refuse during assembly and installation.
2. When installation is complete, system shall be thoroughly cleaned and new filters provided for equipment upon acceptance of the job.

H. Tests.

1. Duct System. Contractor shall operate the various fans and blower systems and balance and adjust to required air quantities. Adjust units for the least noise and vibration consistent with its duty.

I. Adjustments.

1. Adjust all thermostats, limit switches and other controls to operate as intended.
2. Adjust all supply air quantities to conform to amounts indicated on the Drawings and record on Drawings along with outlet temperature. Contractor shall turn over certified copies to the Architect-Engineer.
3. Certify to Owner that all adjustments have been made and equipment is operating properly.

J. Mechanical Equipment Schedule.

See Schedule on Drawings.

K. Operating Instructions.

Upon completion, the Contractor shall make up a set of operating instructions covering all mechanical equipment with moving or moveable parts including general operating of heating, plumbing and cooling systems and shall give the Architect three (3) copies of these instructions; one copy to be retained in the Architect's files and the other two to be transmitted to the Owner. Instructions shall be typewritten for particular job and bound. Manufacturer's printed operation and maintenance instructions shall also be provided for each piece of equipment.

- (a) Name, address, and telephone number or party to be contacted for 24 hour service for each item of equipment.
- (b) Starting, stopping, lubrication, and adjustment shall be clearly indicated for each piece of equipment.
- (c) The Owner shall be thoroughly instructed by a factory representative on each piece of equipment.

SECTION 15610 – BUILDING HVAC AUTOMATION

PART 1 - GENERAL

1.1 SYSTEM DESCRIPTION

- A. The intent of this specification is to provide a peer-to-peer networked, stand-alone, distributed control system with the capability to integrate ANSI/ASHRAE Standard 135 BACnet technology in one open, interoperable system.
- B. The BMS shall be comprised of controllers connected to the owner's local or wide area network, depending on configuration. Access to the system, either locally in each building, or remotely from a central site or sites, shall be accomplished through standard Web browsers, via the Internet and/or local area network. The BMS will be customizable for multiple users with tiered levels of command, viewing capability, and homepage.
- C. The entire new BMS shall be comprised of a network of interoperable, stand-alone digital controllers communicating via BACnet communication protocols.
 - 1. All communication from controllers (both unit level and system level) shall be through BACnet. BACnet controllers shall be BTL certified.
 - 2. No other communication protocols shall be accepted.
- D. Direct Digital Control (DDC) technology shall be used to provide the functions necessary for control of mechanical systems on this project. The control system shall accommodate simultaneous multiple user operation. Access to the control system data should be limited only by operator password. Multiple users shall have access to all valid system data. An operator shall be able to log onto any workstation on the control system and have access to all appropriate data.
- E. The control system shall be designed such that each mechanical system will be able to operate under stand-alone control. As such, in the event of a network communication failure, or the loss of any other controller, the control system shall continue to independently operate under control.
- F. The documentation is schematic in nature. The Contractor shall provide hardware and software necessary to implement the functions and sequences shown.
- G. The system shall be a web-based system. The Owner will be able to view, edit, and evaluate their system through any PC connected to the LAN that includes a current web browser.
- H. The BMS shall have the inherent capability to integrate multiple building functions including equipment supervision and control, alarm management, energy management, and historical data collection and archiving.

- I. Functional requirements include, but are not limited to:
1. Upload/Download of controllers.
 2. Flashing of controllers with permanent changes to controller programs.
 3. Controller Level Occupancy Scheduling.
 4. Parameter Access for controllers.
 5. Global data sharing and scheduling.
 6. Setpoint change.
 7. Number of terminal unit points limited to those specified or needed for the operational sequence.
 8. Include point mapping and graphic construction.
 9. Global processes to include, but not limited to fire alarm system management (alarm and trouble), outdoor lighting, meter management.
 10. All work by the Control Contractor shall be independent of other vendors and Owner intervention.
 11. Control Contractor to provide all training needed to allow Owner to operate and maintain the system without native vendor intervention.
 12. Control Contractor to provide electronic copies of all operating system software and project database.
- J. The BMS shall consist of the following:
1. Building controllers.
 2. Standalone application specific controllers (ASCs).
 3. Internet interface through contractor-furnished internet server. Internet server to have capability to serve multiple buildings in future. Firewall protection shall be independent/separate from Owner's firewall and shall be provided by Contractor. Coordinate connections and requirements with Owner's IS department. Required internet software/hardware/licenses shall be provided by contractor. Server shall be capable of long term data trending and archiving of all analog and digital inputs and outputs, command auditing, and energy management functions. Internet server shall be capable of communicating and coordinating with up to (4) four other building networks.
- K. The system shall be modular in nature, and shall permit expansion of both capacity and functionality through the addition of sensors, actuators, standalone DDC panels, and operator devices.
- L. System architectural design shall eliminate dependence upon any single device for alarm reporting and control execution. controller shall operate independently by performing its own specified control, alarm management, and operator I/O. The failure of any single component or network connection shall not interrupt the execution of control strategies at other operational devices.
- M. The BMS herein specified shall be fully integrated and installed as a complete package by the Temperature Controls Contractor. The BMS shall include all computer server software and hardware, operator input/output devices, data gathering panels, automation sensors and controls and wiring.

- N. The engineering, installation supervision and labor, calibration, software programming, and checkout necessary for a complete and fully operational control system as specified hereafter shall be provided by the Controls Contractor.
- O. Refer to other Division-23 sections and drawings for the following work:
1. Installation of automatic valves, control dampers, temperature sensing wells, pressure taps, flow switches.
 2. Furnishing and installation of access doors required to service control equipment.
 3. Installation of any blank off plates required for damper sections that are smaller than duct size.
 4. Sequences of operation.
 5. Points lists.
- P. Provide the following electrical work as work of this section, complying with requirements of Division-16 sections:
1. Control wiring between field-installed controls, indicating devices, and unit control panels.
 2. All power wiring for field mounted panels shall be installed using dedicated circuits from nearest available general purpose panels. See electrical drawings for more information. Contractor is responsible for all control panel and application specific power wiring to the extent necessary to provide a complete and operable system. Coordinate power requirements with the electrical contractor.

1.2 SOFTWARE LICENSE AGREEMENT

- A. The Owner shall sign a copy of the manufacturer's standard software and firmware licensing agreement as a condition of this contract. Such license shall grant use of all programs and application software to Owner as defined by the manufacturer's license agreement, but shall protect manufacturer's rights to disclosure of trade secrets contained within such software.
- B. It is the Owner's express goal to implement an open system that will allow products from various suppliers to be integrated into a unified system in order to provide flexibility for expansion, maintenance, and service of the system. The Owner shall be the named license holder of all software associated with any and all incremental work on the project(s).
- C. The Owner shall receive ownership of all job specific configuration documentation, data files, and application-level software developed for the project. This shall include all custom, job specific software code and documentation for all configuration and programming that is generated.
- D. Any and all required IDs and passwords or other log in credentials for access to any component or software program shall be provided to the Owner.

- E. If applicable, the Owner shall determine which organizations are to be named in the SI organization ID (“orgid”) of all software licenses. Owner shall be free to direct the modification of the “orgid” in any software license, regardless of supplier.

1.3 SUBMITTALS

- A. Product Data: Submit manufacturer's technical product data for each control device furnished, indicating dimensions, capacities, performance characteristics, electrical characteristics, finishes of materials, and including installation instructions and start-up instructions.
- B. Shop Drawings: Submit shop drawings for the BMS containing the following information:
 - 1. Indicate all required electrical wiring. Clearly differentiate between portions of wiring that are factory-installed and portions to be field-installed.
 - 2. Schematic flow diagram of system showing fans, pumps, coils, dampers, valves, and control devices.
 - 3. Label each control device with setting or adjustable range of control.
 - 4. BMS panel riser diagrams indicating number of panels, locations, point assignments, etc.
 - 5. Provide manufacturers cut sheets for major system components. When manufacturer's cut sheets apply to a product series rather than a specific product, the data specifically applicable to the project shall be highlighted or clearly indicated by other means. Each submitted piece of literature and drawings shall clearly reference the specification and/or drawing that the submittal is being submitted to cover. Include:
 - a. Building Controllers
 - b. Application Specific Controllers
 - c. Operator Interface Computer
 - d. Auxiliary Control Devices
 - e. Proposed control system riser diagram showing system configuration, device locations, addresses, and cabling.
 - f. Detailed termination drawings showing all required field and factory terminations. Terminal numbers shall be clearly labeled.
 - g. Points list showing all system objects, and the proposed English language object names.
 - h. Sequence of operations for each system under control. This sequence shall be specific for the use of the Control System being provided for this project.
 - i. Color prints of proposed graphics with a list of points for display.
- C. Training Manuals: The Contractor shall provide a course outline and training manuals for all training classes at least six weeks prior to the first class. The Owner reserves the right

to modify any or all of the training course outline and training materials. Review and approval by Owner and shall be completed at least 3 weeks prior to first class.

1.4 QUALIFICATIONS

- A. Manufacturers: Engineered Controls Inc, or Approved Equivalent
- B. The Controls Contractor shall have a staff of application engineers and system technical representatives within 300 miles, all of whom have been trained by the manufacturer on the BMS proposed and bid.
- C. The Controls Contractor shall have a minimum of ten years of experience in the design of computer based BMS systems similar in performance to that specified herein. Bids by any firm whose principal business is not that of manufacturing and installing of BMS systems within 100 miles of the project site will not be acceptable.
- D. The Controls Contractor must be certified by the equipment manufacturer in the design, installation, and service of the proposed BMS system.
- E. The Controls Contractor shall provide maximum 24-hour response time to an Owner's call for service and shall provide maximum 2-hour response time to an Owner's call for emergency service (i.e. situations in which the building is at risk for damage due to freezing or other conditions, or situations in which life safety of building occupants is at risk).

1.5 WARRANTY

- A. Warranty shall include full parts-and-labor coverage within a period of one (1) year after substantial completion.
- B. Labor & materials for control system shall be warranted free from defects for a period of one (1) year after final completion acceptance by the Owner. Control System failures during the warranty period shall be adjusted, repaired, or replaced at no charge or reduction in service to the Owner. The Contractor shall respond to the Owner's request for warranty service within 24 hours during customary business hours.
- C. At the end of the final start-up/testing, if equipment and systems are operating satisfactorily to the Owner, the Owner shall sign certificates certifying that the control system's operation has been tested and accepted in accordance with the terms of this specification. The date of Owner's acceptance shall be the start of warranty.
- D. Operator workstation software, project specific software, graphics, database, and firmware updates shall be provided to the Owner at no charge during the warranty period. Written authorization by Owner must, however, be granted prior to the installation of such changes.

- E. The system provider shall provide a web-accessible Users Network to give the Owner access to question/answer forum, graphics library, user tips, upgrades, and training schedules.

1.6 OWNERSHIP OF PROPRIETARY MATERIAL

- A. All project developed hardware and software shall become the property of the Owner. These include but are not limited to:
 1. Project graphic images
 2. Record drawings
 3. Project database
 4. Job-specific application programming code
 5. All documentation.

1.7 PRODUCT AGE

- A. All products used in this installation shall be new, currently under manufacture, and shall be applied in similar installations for a minimum of 5 years. This installation shall not be used as a test site for any new products unless explicitly approved by the Owner's representative in writing prior to bid date. Spare parts and replacement products shall be available for at least 10 years after completion of this contract.

PART 2 - PRODUCTS

2.1 NETWORKING/COMMUNICATIONS

- A. This project shall comprise of a network utilizing high-speed BACnet for communications between Building Controllers and PC Workstations. BACnet sub-networks shall be used for communications between Building Controllers, Custom Application Controllers and Application Specific Controllers. No other communication protocols shall be accepted.
- B. All Building Controllers shall have a communications port for connections with the operator interfaces. This may be either a network interface node for connection to the Ethernet network or an RS-232 port for Point-to-Point connection.
- C. Only the open protocol BACnet will be accepted on this project. BACnet controllers shall be BTL certified. No other protocols will be accepted.
- D. Control Contractors shall include as part of their bid a description of which protocols will be utilized for coordination with the equipment manufacturers.
- E. The design of the BMS shall network Standalone DDC Panels. Inherent in the system's design shall be the ability to expand or modify the network either via a local area

network, or auto-dial telephone line modem connections, or via a combination of the two networking schemes.

- F. DDC Panel Support: DDC panels shall directly reside on a local area network such that communications may be executed directly between DDC panels on a peer-to-peer basis.
- G. Dynamic Data Access: All operator devices, either network resident or connected via dial-up modems, shall have the ability to access all point status and application report data, or execute control functions for any and all other devices via the local area network. Access to data shall be based upon logical identification of building equipment.
- H. Access to system data shall not be restricted by the hardware configuration of the facility management system. The hardware configuration of the BMS network shall be totally transparent to the user when accessing data or developing control programs.
- I. General Network Design: Network design shall include the following provisions:
 - 1. High speed data transfer rates for alarm reporting, quick report generation from multiple controllers, and upload/download efficiency between network devices. The minimum baud rate shall be 1 Megabaud.
 - 2. Detection and accommodation of single or multiple failures of DDC panels or the network media. The network shall include provisions for automatically reconfiguring itself to allow all operational equipment to perform their designated functions as effectively as possible in the event of single or multiple failures.
 - 3. Message and alarm buffering to prevent information from being lost.
 - 4. Error detection, correction, and retransmission to guarantee data integrity.
 - 5. Default device definition to prevent loss of alarms or data, and ensure alarms are reported as quickly as possible in the event an operator device does not respond.
 - 6. Communications must be of a deterministic nature to assure calculable performance under worst-case network loading.
 - 7. Synchronization of the real time clocks in all DDC panels shall be provided.

2.2 OPERATOR INTERFACE

- A. Operator Interface. Furnish 1 PC-based workstation. The workstation shall be able to access all information in the system. Workstation shall reside on the same high-speed network as the building controllers or shall be able to connect to the system via an Owner-provided VPN connection. Coordinate with Owner for exact requirements.
- B. The workstation's minimum configuration is as follows:
 - 1. Motherboard: With 8 integrated USB 2.0 or USB 3.0 ports, integrated Intel Pro 10/100 (Ethernet), integrated audio, bios, and hardware monitoring.
 - 2. Processor: Minimum 3.0 GHz.
 - 3. Random-Access Memory: Minimum 4.0 GB.
 - 4. Graphics: Video adapter, minimum 1600 x 1200 pixels.
 - 5. Monitor: 24 inches, LCD flat panel, color.
 - 6. Keyboard: QWERTY, 105 keys in ergonomic shape.

7. Hard-Disk Drive: 2.0 TB.
8. CD-ROM Read/Write Drive: 48x24x48.
9. Mouse: Three button, optical.
10. Uninterruptible Power Supply: 2 kVa.
11. Operating System: Microsoft Windows 7.0 Professional or newer Windows system, with high-speed Internet access.
 - a. ASHRAE 135 Compliance: Workstation shall use ASHRAE 135 protocol and communicate using ISO 8802-3 (Ethernet) datalink/physical layer protocol.

2.3 GRAPHICS

- A. Provide interactive graphics on the BMS server with the following features:
 1. Dynamic Color Graphic Displays: Color graphic floor plan displays, and system schematics for each piece of mechanical equipment to optimize system performance analysis and speed alarm recognition.
 - a. The Architect/Engineer will provide CAD files to the contractor at no cost if requested by the contractor.
 2. System Selection/Penetration: The operator interface shall allow users to access the various system schematics and floor plans via a graphical penetration scheme, menu selection, or text-based commands.
 - a. Equipment & Application Page
- B. **The operator interface shall include standard pages for all equipment and applications.** These pages shall allow an operator to obtain information relevant to the operation of the equipment and/or application, including:
 - a) Animated equipment graphics for each major piece of equipment and floor plan in the system. This includes chillers, cooling towers, pumps, VFDs, VAV terminal units, exhaust fans, fan coil units, unit heaters, boilers, water heaters, and other similar equipment. The graphics shall show all points dynamically as specified in the points list or as described in the sequence of operations. Animation capabilities shall include the ability to show a sequence of images reflecting the position of analog outputs such as valve/damper positions, fan speed, etc. Graphics shall be capable of launching other
 - b) Alarms relevant to the equipment or application without requiring a user to navigate to an alarm page and perform a filter.
 - c) Historical data for the equipment or application without requiring a user to navigate to a data log page and perform a filter.
 - d) System Graphics. Operator interface shall be graphically based and shall include at least one graphic per piece of equipment or occupied zone, graphics for each chilled water and hot water system, and graphics that summarize conditions on each floor of each building included in this contract. Indicate thermal comfort on floor plan summary graphics using colors to represent zone temperature relative to zone set point.

- 1) **Functionality.** Graphics shall allow operator to monitor system status, to view a summary of the most important data for each controlled zone or piece of equipment, to use point and-click navigation between zones or equipment, and to edit set points and other specified parameters.
- 2) **Graphic Imagery.** Graphics shall use 3D images for all standard and custom graphics. The only allowable exceptions will be photo images, maps, schematic drawings, and selected floor plans.
- 3) **Animation.** Graphics shall be able to animate by displaying different Image lies for changed object status.
- 4) **Alarm Indication.** Indicate areas or equipment in an alarm condition using color or other visual indicator.
- 5) **Format.** Graphics shall be saved in an industry-standard format such as BMP, JPEG, PNG, or GIF. Web-based system graphics shall be viewable on browsers compatible with World Wide Web Consortium browser standards. Web graphic format shall require no plug-in (such as HTML and JavaScript) or shall only require widely available no-cost plug-ins (such as Active-X and Macromedia Flash).

C. Custom Graphics

1. The operator interface shall be capable of displaying custom graphics in order to convey the status of the facility to its operators.
2. **Graphical Navigation.** The operator interface shall provide dynamic color graphics of building areas, systems and equipment.
3. **Graphical Data Visualization.** The operator interface shall support dynamic points including analog and binary values, dynamic text, static text, and animation files.
Custom Background Images. Custom background images shall be created with the use of commonly available graphics packages such as Adobe Photoshop. The graphics generation package shall create and modify graphics that are saved in industry standard formats such as GIF and JPEG.
 - a. **Electronic Operation & Maintenance Manuals:** The operator interface shall allow users to access electronic operation and maintenance manuals via the graphical floor plans, system schematics, menu selection, or text-based commands.
 - b. **Dynamic Data Displays:** Dynamic temperature values, humidity values, flow values, and status indication shall be shown in their actual respective locations, and shall automatically update to represent current conditions without operator intervention.
 - c. **Windowing:** The windowing environment of the PC Operator Workstation shall allow the user to simultaneously view several graphics at the same time to analyze total building operation, or to allow the display of a graphic associated with an alarm to be viewed without interrupting work in progress.
 - d. **Graphics Definition Package:** Graphic generation software shall be provided to allow the user to add, modify, or delete system graphic displays.

- 1) The contractor shall provide libraries of pre-engineered screens and symbols depicting standard air handling unit components (e.g. fans, cooling coils, filters, dampers, etc.), complete mechanical systems (e.g. constant volume terminal reheat, VAV, etc.) and electrical symbols.
- 2) The graphic development package shall use a mouse or similar pointing device in conjunction with a drawing program to allow the user to perform the following:
 - a) Define symbols
 - b) Position and size symbols
 - c) Define background screens
 - d) Define connecting lines and curves
 - e) Locate, orient and size descriptive text
 - f) Define and display colors for all elements
 - g) Establish correlation between symbols or text and associated system points or other displays.
4. Graphical displays can be created to represent any logical grouping of system points or calculated data based upon building function, mechanical system, building layout, or any other logical grouping of points which aids the operator in the analysis of the facility. To accomplish this, the user shall be able to build graphic displays that include point data from multiple DDC panels, including application specific controllers used for DDC unitary or VAV terminal unit control.
5. Initial graphics displays of equipment scheduled on the points list shall be programmed and set-up by the contractor.

2.4 WEB-BASED OPERATOR INTERFACE

- A. System shall include a web-based operator interface to allow user functions to be accomplished from any network connected PC that includes a web browser. Provide and install all communications software and licenses required to provide this functionality.
- B. Operators shall be able to utilize a browser such as Microsoft Internet Explorer with the appropriate plug-in software.
- C. All communications between the web browser and web page server shall be encrypted using 128 bit SSL encryption.
- D. The web page server shall be installed on the Owner's Intranet or on the Internet. Coordinate with Owner.
- E. The system shall have adequate capacity to store and serve up to 450 user defined graphics that each include up to 30 points per graphic.
- F. Any unlimited number of users shall be able to access system web pages.
- G. Up to 25 users shall be able to use the system simultaneously.

H. Functionality:

1. Operators shall be required to enter a valid username and password to access the system. The view of the system provided for the user will be customized based on user identity.
2. Operator security: Each operator shall be able to be assigned a unique username and password. Users shall be assigned to view, view and edit or administrative capability.
3. The web-based operator interface shall display the same graphics that have been created for any associated Windows-based Operators Workstation. Graphics shall be able to contain both static information such as floor plans and equipment schematics, as well as dynamic information including space temperatures, setpoints, and equipment status information.
4. All dynamic values shall be refreshed with live data upon initial graphic presentation and automatically refreshed every 10 seconds thereafter. The refresh of dynamic data shall not require a refresh of the static information on the graphic.
5. Operators with proper security shall be able to override setpoints and equipment operation.
6. System schedules shall be easily selected for display. Operators with valid security shall be allowed to make changes to schedules including modifications to start and stop times and creating exception days. These changes shall be made graphically within the web browser.
7. A log of system alarms and events shall be able to be viewed from the web browser. Operators with proper security shall be able to acknowledge alarms.
8. System trends shall be able to be selected and viewed. Trends shall be shown graphically with the proper axis scaling automatically selected. Multiple trends shall be able to be viewed at one time.

2.5 BUILDING CONTROLLERS

- A. Building controllers shall utilize the BACnet open protocol communication protocol.
- B. General: Building controllers shall be microprocessor based, multi-tasking, multi-user, real-time digital control processors. Each building controller shall consist of modular hardware with plug-in enclosed processors, communication controllers, power supplies, and input/output modules. A sufficient number of controllers shall be supplied to fully meet the requirements of this specification and the points list.
- C. Memory: Each building controller shall have sufficient memory to support its own operating system and databases including:
 1. Control processes
 2. Energy Management Applications
 3. Alarm Management
 4. Historical/Trend Data for all points
 5. Maintenance Support Applications

6. Custom Processes
 7. Operator I/O
 8. Dial-Up Communications
 9. Manual Override Monitoring
- D. Point types: Each building controller shall support the following types of point inputs and outputs:
1. Digital Inputs (DI) for status/alarm contacts
 2. Digital Outputs (DO) for on/off equipment control
 3. Analog Inputs (AI) for temperature, pressure, humidity, flow, and position measurements
 4. Analog Outputs (AO) for valve and damper position control, and capacity control of primary equipment.
 5. Pulse Inputs for pulsed contact monitoring
- E. Expandability: The system shall be modular in nature, and shall permit easy expansion through the addition of software applications, workstation hardware, field controllers, sensors, and actuators. Spare point capacities shall be clearly indicated on submittals.
- F. Serial Communication Ports: Building controllers shall provide at least two RS-232C serial data communication ports for simultaneous operation of multiple operator I/O devices such as industry standard printers, laptop workstations, PC workstations, and panel mounted or portable DDC panel Operator's Terminals. Building controllers shall allow temporary use of portable devices without interrupting the normal operation of permanently connected modems, printers, or network terminals.
- G. Hardware Override Monitoring: Building controllers shall monitor the status or position of all overrides, and include this information in logs and summaries to inform the operator that automatic control has been inhibited. Building controllers shall also collect override activity information for daily and monthly reports.
- H. Local Status Indicator Lamps: Building controllers shall provide local status indication for each binary input and output for constant, up-to-date verification of all point conditions without the need for an operator I/O device.
- I. Integrated On-Line Diagnostics: Each building controllers shall continuously perform self-diagnostics, communication diagnosis and diagnosis of all subsidiary equipment. The building controller shall provide both local and remote annunciation of any detected component failures, or repeated failure to establish communication. Indication of the diagnostic results shall be provided at each building controller, and shall not require the connection of an operator I/O device.
- J. Surge and Transient Protection: Isolation shall be provided at all network terminations, as well as all field point terminations to suppress induced voltage transients consistent with IEEE Standard 587-1980.

K. Powerfail Restart: In the event of the loss of normal power, there shall be an orderly shutdown of all building controllers to prevent the loss of database or operating system software. Non-Volatile memory shall be incorporated for all critical controller configuration data, and battery back-up shall be provided to support the real-time clock and all volatile memory for a minimum of 72 hours.

1. Upon restoration of normal power, the building controller shall automatically resume full operation without manual intervention.
2. Should building controller memory be lost for any reason, the user shall have the capability of reloading the building controller via the local area network, via the local RS-232C port.

L. Software Features

1. All necessary software to form a complete operating system as described in this specification shall be provided. The software programs specified in this section shall be provided as an integral part of the controller and shall not be dependent upon any higher level computer for execution.
2. Pre-Tested Control Algorithms: The controller shall have the ability to perform the following pre-tested control algorithms:
 - a. Two Position Control
 - b. Proportional Control
 - c. Proportional plus Integral Control
 - d. Proportional, Integral, plus Derivative Control
 - e. Automatic Control Loop Tuning
3. Equipment Cycling Protection: Control software shall include a provision for limiting the number of times each piece of equipment may be cycled within any one-hour period.
4. Heavy Equipment Delays: The system shall provide protection against excessive demand situations during start-up periods by automatically introducing time delays between successive start commands to heavy electrical loads.
5. Powerfail Motor Restart: Upon the resumption of normal power, the controller shall analyze the status of all controlled equipment, compare it with normal occupancy scheduling, and turn equipment on or off as necessary to resume normal operation.
6. Energy Management Applications: Controllers shall have the ability to perform any or all of the following energy management routines:
 - a. Time of Day Scheduling
 - b. Calendar based Scheduling
 - c. Holiday Scheduling
 - d. Temporary Schedule Overrides
 - e. Optimal Start
 - f. Optimal Stop
 - g. Night Setback Control
 - h. Enthalpy Switchover (Economizer)
 - i. Peak Demand Limiting
 - j. Fan Speed/CFM Control
 - k. Heating/Cooling Interlock

- l. Cold Deck Reset
 - m. Hot Deck Reset
 - n. Chilled Water Reset
 - o. Condenser Water Reset
 - p. Chiller Sequencing
7. Specific routines are described under section 23 09 93 "Sequence of Operation" and as shown on drawings.
 8. All programs shall be executed automatically without the need for operator intervention and shall be flexible enough to allow user customization. Programs shall be applied to building equipment as described in the Execution portion of this specification.
 9. Custom Process Programming Capability: Controllers shall be able to execute custom, job-specific processes defined by the user, to automatically perform calculations and special control routines.
 10. Custom Process Programming Capability: Controllers shall be able to execute custom, job-specific processes defined by the user, to automatically perform calculations and special control routines.
 - a. Process Inputs and Variables: It shall be possible to use any of the following in a custom process:
 - b. Any system-measured point data or status
 - 1) Any calculated data
 - 2) Any results from other processes
 - 3) User-Defined Constants
 - 4) Arithmetic functions (+, -, *, /, square root, exp, etc.)
 - 5) Boolean logic operators (and, or exclusive or, etc.)
 - 6) On-delay/Off-delay/One-shot timers
 - c. Process Triggers: Custom processes may be triggered based on any combination of the following:
 - 1) Time interval
 - 2) Time of day
 - 3) Date
 - 4) Other processes
 - 5) Time Programming
 - 6) Events (e.g., point alarms)
 - d. Dynamic Data Access: A single process shall be able to incorporate measured or calculated data from any and all other controllers on the local area network. In addition, a single process shall be able to issue commands to points in any and all other controllers on the local area network.
 - e. Advisory/Message Generation: Processes shall be able to generate operator messages and advisories to operator I/O devices. A process shall be able to directly send a message to a specified device, buffer the information in a follow-up file, or cause the execution of a dial-up connection to a remote device such as a printer, pager, e-mail, text message, etc.
 - f. Custom Process Documentation: The custom control programming feature shall be self-documenting. All interrelationships defined by this feature

shall be documented via graphical flowcharts and English language descriptors.

11. Alarm Management: Alarm management shall be provided to monitor, buffer, and direct alarm reports to remote operator devices via telephone modem and memory files. Each controller shall perform distributed, independent alarm analysis and filtering to minimize operator interruptions due to non-critical alarms, minimize network traffic, and prevent alarms from being lost.
 - a. Any object in the system shall be configurable to generate an alarm when transitioning in and out of a normal or fault state.
 - b. Any object in the system shall allow the alarm limits, warning limits, states, and reactions to be configured for each object in the system.
 - c. An alarm/event shall be capable of triggering the following actions:
 - 1) Route the alarm/event to one or more logs
 - 2) Route an email to message one or more operators
 - 3) Log a data point for a period of time
 - 4) Run a custom control program
 - d. Alarm messages shall include the name of the alarm location, the device that generated the alarm, and the alarm message itself. Plain English text (i.e. minimal abbreviations) shall be used for messages.
12. Historical Data and Trend Analysis: A variety of historical data collection utilities shall be provided to automatically sample, store, and display system data in all of the following ways.
 - a. Continuous Point Histories: Controllers shall store Point History Files for all analog and binary inputs and outputs. The Point History routine shall continuously and automatically sample the value of all analog inputs at half hour intervals. Samples for all points shall be stored for the past 96 hours to allow the user to immediately analyze equipment performance and all problem-related events for the past 4 days. Point History Files for binary input or output points and analog output points shall include a continuous record of the last 4 days or ten status changes or commands for each point, whichever is longer.
 - b. Control Loop Performance Trends: Controllers shall also provide high resolution sampling capability with an operator-adjustable resolution of 10-300 seconds in one-second increments for verification of control loop performance.
 - c. Extended Sample Period Trends: Measured and calculated analog and binary data shall also be assignable to user-definable trends for the purpose of collecting operator-specified performance data over extended periods of time. Sample intervals of 1 minute to 2 hours, in one-minute intervals, shall be provided. Each building controller shall have a dedicated buffer for trend data, and shall be capable of storing a minimum of 5000 data samples.
 - d. Data Storage and Archiving: Trend data shall be stored at the controllers and uploaded to the server hard drive when archival is desired. Uploads shall occur based upon either user-defined interval, manual command, or when the trend buffers become full.

13. Runtime Totalization: Controllers shall automatically accumulate and store runtime hours for binary input and output points as specified in the Execution portion of this specification.
 - a. The totalization routine shall have a sampling resolution of one minute or less.
 - b. The user shall have the ability to define a warning limit for Runtime Totalization. Unique, user-specified messages shall be generated when the limit is reached.
14. Analog/Pulse Totalization: Controllers shall automatically sample, calculate and store consumption totals on a daily, weekly, or monthly basis for user-selected analog and binary pulse input-type points.
 - a. Totalization shall provide calculation and storage of accumulations of up to 99,999,999.9 units (e.g. KWH, gallons, KBTU, tons. etc.).
 - b. The Totalization routine shall have a sampling resolution of one minute or less.
 - c. The user shall have the ability to define a warning limit. Unique, user-specified messages shall be generated when the limit is reached.
15. Event Totalization: Controllers shall have the ability to count events such as the number of times a pump or fan system is cycled on and off. Event totalization shall be performed on a daily, weekly, or monthly basis.
 - a. The Event Totalization feature shall be able to store the records associated with a minimum of 9,999,999 events before reset.
 - b. The user shall have the ability to define a warning limit. Unique, user-specified messages shall be generated when the limit is reached.

2.5 APPLICATION SPECIFIC CONTROLLERS (ASCs)

- A. Each Application Specific Controller (ASC) shall be capable of performing its specified control responsibilities independently of other controllers in the network. Each ASC shall be a microprocessor-based, multi-tasking, real-time digital control processor.
- B. Controllers shall support all the necessary point inputs and outputs to perform the specified control sequences in a totally standalone fashion.
- C. Controllers shall have a library of control routines and program logic to perform the sequence of operation.
- D. Each controller shall have sufficient memory to support its own operating system and data bases including:
 1. Control Processes
 2. Energy Management Applications
 3. Operator I/O (Portable Service Terminal)
 - 4.
- E. The operator interface to any ASC point data or programs shall be through any PC or portable operator's terminal connected to any DDC panel in the network.

- F. Application Specific Controllers shall directly support the temporary use of a portable service terminal. The capabilities of the portable service terminal shall include but not be limited to the following:
1. Display temperatures
 2. Display status
 3. Display setpoints
 4. Display control parameters
 5. Override binary output control
 6. Override analog setpoints
 7. Modification of gain and offset constants
- G. Powerfail Protection: All system setpoints, proportional bands, control algorithms, and any other programmable parameters shall be stored such that a power failure of any duration does not necessitate reprogramming the controller.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Install control units and other hardware in position on permanent walls where not subject to vibration.
- B. Install software in control units. Implement all features of programs to specified requirements and appropriate to sequence of operation.
- C. Conduit and electrical wiring in accordance with appropriate.
- D. Install equipment, piping, wiring/conduit parallel to building lines (i.e. horizontal, vertical, and parallel to walls) wherever possible.
- E. Provide sufficient slack and flexible connections to allow for vibration of piping and equipment.
- F. Install all equipment in readily accessible location as defined by chapter 1 article 100 part A of the NEC. Control panels shall be attached to structural walls unless mounted in equipment enclosure specifically designed for that purpose. Panels shall be mounted to allow for unobstructed access for service.
- G. Verify integrity of all wiring to ensure continuity and freedom from shorts and grounds.
- H. All equipment, installation, and wiring shall comply with acceptable industry specifications and standards for performance, reliability, and compatibility and be executed in strict adherence to local codes and standard practices.

3.2 WIRING

- A. All control and interlock wiring shall comply with the national and local electrical codes and Division 26 of these specifications. Where the requirements of this section differ with those in Division 26, the requirements of this section shall take precedence.
- B. Where Class 2 wires are in concealed and accessible locations including ceiling return air plenums, approved cables not in raceway may be used provided that:
 - 1. Circuits meet NEC Class 2 (current limited) requirements. (Low voltage power circuits shall be sub fused when required to meet Class 2 current limit.)
 - 2. All cables shall be UL listed for application, i.e., cables used in ceiling plenums shall be UL listed specifically for that purpose.
- C. Do not install Class 2 wiring in conduit containing Class 1 wiring. Boxes and panels containing high voltage may not be used for low voltage wiring except for the purpose of interfacing the two (e.g. relays and transformers).
- D. Where Class 2 wiring is run exposed, wiring shall be run parallel along a surface or perpendicular to it, and bundled, using approved wire ties at no greater than 10 ft intervals. Such bundled cable shall be fastened to the structure, using specified fasteners, at 5 ft intervals or more often to achieve a neat and workmanlike result.
- E. All wire-to-device connections shall be made at a terminal blocks or terminal strip. All wire-to-wire connections shall be at a terminal block, or with a crimped connector. All wiring within enclosures shall be neatly bundled and anchored to permit access and prevent restriction to devices and terminals.
- F. Maximum allowable voltage for control wiring shall be 120V. If only higher voltages are available, the Control System Contractor shall provide step down transformers.
- G. All wiring shall be installed as continuous lengths, where possible. Any required splices shall be made only within an approved junction box or other approved protective device.
- H. Install plenum wiring in sleeves where it passes through walls and floors. Maintain fire rating at all penetrations in accordance with other sections of this specification and local codes.
- I. Size of conduit and size and type of wire shall be the design responsibility of the Control System Contractor, in keeping with the manufacturer's recommendation and NEC.
- J. Control and status relays are to be located in designated enclosures only. These relays may also be located within packaged equipment control panel enclosures. These relays shall not be located within Class 1 starter enclosures.
- K. Follow manufacturer's installation recommendations for all communication and network cabling. Network or communication cabling shall be run separately from other wiring.

- L. Adhere to Division 26 requirements for installation of raceway.
- M. This Contractor shall terminate all control and/or interlock wiring and shall maintain updated (as built) wiring diagrams with terminations identified at the job site.
- N. Flexible metal conduits and liquid tight, flexible metal conduits shall not exceed 3' in length and shall be supported at each end. Flexible metal conduit less than 1/2" electrical trade size shall not be used. In areas exposed to moisture, including mechanical rooms, liquid tight, flexible metal conduits shall be used.

3.3 CONTROLLERS

- A. Provide a separate Controller for each major piece of HVAC and/or plumbing equipment. Points used for control loop reset such as outside air or space temperature are exempt from this requirement.
- B. Controllers shall be selected to provide a minimum of 15% spare I/O point capacity for each point type found at each location. If input points are not universal, 15% of each type is required. If outputs are not universal, 15% of each type is required. A minimum of one spare is required for each type of point used.
- C. Future use of spare capacity shall require providing the field device, field wiring, points dataBASE definition, and custom software. No additional Controller boards or point modules shall be required to implement use of these spare points.

3.4 PROGRAMMING

- A. Provide sufficient internal memory for the specified control sequences and trend logging. There shall be a minimum of 25% of available memory free for future use.
- B. Point Naming: System point names shall be modular in design, allowing easy operator interface without the use of a written point index.
- C. Software Programming
 - 1. Provide programming for the system as per specifications and adhere to the strategy algorithms provided. All other system programming necessary for the operation of the system but not specified in this document shall also be provided by the Control System Contractor. Imbed into the control program sufficient comment statements to clearly describe each section of the program. The comment statements shall reflect the language used in the sequence of operations.
- D. Demonstration: A complete demonstration and readout of the capabilities of the monitoring and control system shall be performed. The contractor shall dedicate a minimum of 16 hours on site with the Owner and his representatives for a complete

functional demonstration of all the system requirements. This demonstration constitutes a joint acceptance inspection, and permits acceptance of the delivered system for on line operation.

3.4 CLEANING

- A. The Contractor shall clean up all debris resulting from his or her activities daily. The contractor shall remove all cartons, containers, crates, etc. under his control as soon as their contents have been removed. Waste shall be collected and placed in a location designated by the Owner.
- B. At the completion of work in any area, the Contractor shall clean all of his/her work, equipment, etc., making it free from dust, dirt and debris, etc.
- C. At the completion of work, all equipment furnished under this Section shall be checked for paint damage, and any factory finished paint that has been damaged shall be repaired to match the adjacent areas. Any metal cabinet or enclosure that has been deformed shall be replaced with new material and repainted to match the adjacent areas.

3.5 MANUFACTURER'S FIELD SERVICES

- A. Start and commission systems. Allow sufficient time for start-up and commissioning prior to placing control systems in permanent operation.
- B. Provide service engineer to instruct Owner's representatives and users in operation of systems plant and equipment as follows:
 - 1. Provide basic operator training for data display, alarm and status descriptors, requesting data, execution of commands and request of logs. Provide training on site.
- C. All instruction and training shall be documented by the contractor as to time, date, attendees and subjects covered.

3.6 ACCEPTANCE

- A. The Contractor shall perform all necessary calibration, testing and de-bugging and perform all required operational checks to insure that the system is functioning in full accordance with these specifications
- B. The Contractor shall perform tests to verify proper performance of components, routines, and points. Repeat tests until proper performance results. This testing shall include a point-by-point log to validate 100% of the input and output points of the DDC system operation.
- C. The BMS will not be accepted as meeting the requirements of Completion until all tests described in this specification have been performed to the satisfaction the Owner. Any tests that cannot be performed due to circumstances beyond the control of the Contractor may be exempt from the Completion requirements if stated as such in writing by the Owner's representative. Such tests shall then be performed as part of the warranty.

SECTION 16010 - ELECTRICAL

1. GENERAL CONDITIONS:

The General Conditions and the Special Conditions apply to all work included under the above heading.

2. SCOPE:

The work included under this Section consists of furnishing all labor, material, services and skilled supervision necessary for the installation and extension of the electrical systems specified herein or shown on the drawings, and its delivery to the Owner upon completion in all respects ready for use.

Each bidder shall visit the job site to fully acquaint and familiarize themselves with the location where the work will proceed.

3. RULES AND REGULATIONS:

Electrical work and materials shall conform to such sections of the American Standards Associations (ASA), National Electric Manufacturers Associations (NEMA), American Institute of Electrical Engineers (AIEE), National Board of Fire Underwriters "National Electric Code" (NEC), Insulated Power Cable Engineers Association (IPCEA), and American Society for Testing Materials (ASTM), standards and specifications as are applicable. The latest edition of all standards and specifications listed above shall apply.

All electrical work shall be in accordance with State and Local Codes. When Electrical Specifications and/or Drawings do not agree with Local Building Ordinances, the Ordinances shall take precedence and the Architect/Engineer will be notified.

This Contractor shall pay for all permits or fees required for the work.

4. COOPERATION WITH OTHER CONTRACTORS:

Perform this work in conformity with the construction called for by other trades and afford other Contractors reasonable opportunity for the execution of their work; properly connect and coordinate this work with the work of other Contractors at such time and in such a manner as not to delay or interfere with their work.

Examine the Drawings and Specifications for the General and Mechanical work and the work of other similar trades; coordinate this work accordingly.

Promptly report to the Architect/Engineer any delay or difficulties encountered in the installation of this work, which might prevent prompt and proper installation, or make it unsuitable to connect with or receive the work of others. Failure to so report shall constitute an acceptance of the work of other trades as being fit and proper for the execution of this work.

5. MATERIALS FURNISHED BY OTHERS:

Certain materials and equipment will be furnished by other Contractors. These materials and equipment, shown on the plans, will be installed by the Electrical Contractor and it shall be incumbent upon this Contractor to familiarize himself with all of the materials and equipment that will be furnished by others, but which he shall install under this contract.

6. MATERIALS AND WORKMANSHIP:

All materials shall be new and of the quality specified. Materials shall be standard products of manufacturers regularly engaged in the production of such equipment and shall be the manufacturer's latest standard design. In all cases, material and equipment shall conform and bear the Underwriters' Laboratories, Inc., label, the fitness for use in the class of work in which it is to be used. All workmanship shall be thoroughly first-class and complete in both effectiveness and appearance, whether finally concealed or exposed, and shall be executed by experienced mechanics for all work installed under this division of the specification.

7. CUTTING FLOORS, WALLS OR CEILING:

Cutting, fitting, repairing, and finishing of carpentry work, metal work, or concrete work, etc., which may be required for this work shall be done by craftsmen skilled in their respective trades. When cutting is required, it shall be done in such a manner as not to weaken walls, partitions, or floors; and holes required to be cut in floors must be drilled without breaking out around the holes.

8. POSITION OF OUTLET:

Center all outlets with regard to paneling, furring, trim, etc. Where several outlets occur in a room, they shall be symmetrically arranged. Outlets improperly located or installed shall be satisfactorily corrected. Damaged finishes shall be repaired or replaced at the Contractor's expense. Outlets shall be set plumb or horizontal and shall extend to the finished surface of the walls, ceiling or floor as the case may be without projecting beyond same.

Receptacles, switches, etc. shown on wood trim, cases or other fixtures shall be installed symmetrically; and, where necessary, shall be set with the long dimension of the plate horizontal, or ganged in tandem.

9. SLEEVES:

All sleeves through floors and walls shall be black iron pipe, flush with walls, ceiling and finish floor of size to accommodate the raceway. Sleeves through outside walls above grade shall be caulked with approved caulking; below grade shall be caulked with oakum and lead wool.

10. ACCESS TO EQUIPMENT:

Starters, switches, receptacles, pull boxes, etc. shall be located to provide for easy access for operation, repair and maintenance; if concealed, access doors shall be provided.

11. "AS-BUILT" DRAWINGS:

The Contractor shall maintain at the construction site one complete set of drawings suitably marked to show all deviations from the original set of drawings. Supplementary sketches may be included if necessary to clearly indicate the work in place.

All work shall be shown to the satisfaction of the Architect/Engineer in order to insure that adequate information is indicated.

The Contractor shall, at the completion of the job, and before final payment is made, deliver to the Architect/Engineer a complete set of marked drawings showing the "As-Built" conditions.

12. CLEANING:

The Contractor shall maintain all areas free from hazardous or obstructive rubbish and debris, due to performance of the electrical work, during construction. When the electrical system has been installed, the Contractor shall remove all rubbish and debris from the building and site, remove all paint, plaster and accumulated dirt from all equipment and fixtures.

13. ELECTRICAL SERVICE:

The existing electric service is 208 volt, three phase, 4-wire, for lighting and power. The service shall enter the new building as shown on the plans. Some general notes can be found on the site plan, however the contractor is strongly advised to visit the site and become familiar with the requirements and existing site conditions.

The Contractor shall furnish and install lighting and power distribution equipment and wiring as shown on the plan.

14. GROUNDING:

All metallic conduits, supports, cabinets and equipment shall be grounded in accordance with the requirements of the National Electrical Code and Municipal Codes and Ordinances. Grounding conductors shall be so located as to permit as far as practicable, the shortest and most direct path to the ground clamp. Ground connections to equipment should be made as close to current carrying parts as practicable.

All ground connections shall have clean contact surfaces and shall be tinned and sweated while bolting. Unless otherwise specified, ground cables shall be installed in exposed conduit, and connections shall be made readily accessible for inspection. Connections shall not be made underground or concealed in floors or walls.

15. PANELBOARDS:

All panelboards are existing, see drawings for more information.

Branch breakers shall employ quick-make and quick-break mechanisms for manual operation as well as automatic operation. Automatic tripping shall be indicated by the breaker handle

assuming a distinctive position from the manual "ON" and "OFF". All multi-pole breakers shall have a common trip. Tie handles will not be permitted.

Provide new typed directories identifying load connected to each new breaker and existing breaker.

Panel size, number of branch circuits, size of branch circuits and size of main breaker shall be shown on the drawings.

Provide enclosed, fusible or non-fusible safety switches where indicated and specified herein. Safety switches shall bear the Underwriters Label with each enclosure being of the NEMA type suitable for the surrounding area and conditions. Switches shall be normal duty, horsepower rated, and shall have a quick-make and quick-break mechanism. All switches used on motor circuits shall have adequate horsepower rating for the motor served and shall be of the fusible type only where two or more motors, or other loads, are connected to the same branch circuit.

Shop drawings shall be submitted as set forth in the General Conditions.

16. MOTOR CONTROL:

The Contractor shall furnish, install and connect a no-fuse safety switch ahead of each motor control, of the size and where indicated on the drawings, or as required by the National Electrical Code. All motor sizes and types of control shall be verified from approved mechanical shop drawings.

It shall be the Contractor's responsibility that all motors are protected with the proper size heater or thermal element, and fuses where fusible switches are shown or indicated on the drawings for each respective motor or item of equipment.

17. FUSES:

Fuses shall be furnished and installed in each fused safety switch rated as shown on the drawings. Fuses shall be Fusetrans, manufactured by the Bussman Mfg. Co.

18. CONDUIT RACEWAYS:

Raceways embedded in concrete on earth, installed in earth below floor slabs, exposed to weather, installed in the mechanical equipment rooms for feeders and for exposed installations, where subject to damage shall be rigid conduit. All other raceways shall be electrical metallic tubing. Electrical metallic tubing shall not be used in basement floor slab and outside slabs, but may be installed in concrete floor slabs on other floors. Flexible conduit may be used where conditions warrant its use. Each length of raceway shall be stamped or labeled with the name or trademark of the manufacturer and shall bear the Underwriters' Laboratories Label.

All conduits buried or otherwise in contact with earth shall be painted one heavy continuous coat of asphalt varnish after assembly of conduit and fittings.

Conduits shall be 1/2" minimum and shall contain no more than the maximum allowable number

of conductors for the conduit size and type of work;

A. Type Material – Conduit material shall meet current codes.

1) Steel Conduit. Rigid steel conduit and steel electrical metallic tubing shall be hot dipped, galvanized or sherardized as manufactured by Wheatland Electric Products Company, Allied Tube, National Electric, General Electric, or approved equal.

- a. Bending. Where hand benders are used, they shall be the type designed for use with steel EMT. Mechanical and hydraulic benders may be used.
- b. Joints. All joint threads shall be lubricated before assembly. Thread lubricant shall be a heavy grease lubricant to which is added not less than 25% granular graphite.
- c. Cutting. Cutting shall be done with hand or power hack saws. Particular attention shall be given to adequate reaming.

2) PVC Conduit. All conduit in areas where corrosion of emt conduit is likely shall be PVC. Rigid PVC conduit and PVC electrical tubing shall be as manufactured by Carlon or approved equal. All conduit shall be UL listed.

- a. Bending. Bends shall be neatly made through heating the conduit in accordance with the manufacturers recommendations.
- b. Joints. All joints shall be glued or threaded in accordance with manufacturers recommendations. All fittings shall be standard PVC fittings made for use with PVC conduit.
- c. Cutting. Cutting shall be done with hand or power hack saws. Particular attention shall be given to adequate reaming.

B. Installation. At the Contractor's option, concealed raceways may be embedded in concrete or installed in furred spaces above ceiling at walls.

Where conduits penetrate the roof seal, suitable waterproof shields or flashing shall be provided.

19. CONDUCTORS:

All 600 volt, or less, conductors shall be copper with insulation of the following types, unless otherwise noted on the drawings.

THHN/THWN OR RHW for dry locations

THHN/THWN, RHW or THW for damp or wet locations

THHN/THWN, RHW or THW as required for feeders

THHN/THWN, RHW or THW for outdoor Underground circuits in conduit

No wire shall be smaller than No. 12, except that wiring for signal and pilot control circuits may be No. 14.

Conductors shall be continuous from outlet to outlet and no splices shall be made except within outlet or junction boxes. Junction boxes may be utilized where required.

Splices and taps for smaller than No. 6 wire shall be soldered and taped or pressure type set screw connectors shall be used, properly taped, except that splices in wire No. 10 or smaller at the Contractor's option may be made with twist-on uninsulated connectors similar and equal to Minnesota Mining & Manufacturing Company "Scotch-lock"; or preinsulated twist-on connectors, "Scotch-lock"; or preinsulated twist-on connectors, "Scotch-lock" Type R; or Ideal "Wing Nuts". All other twist-on connectors shall be specifically submitted for approval prior to use. Connectors of the porcelain cup type with or without metal inserts shall not be used, without exception, including all splices in fixtures which are made in advance by the fixture manufacturer. Splices in wire larger than No. 6 shall be made with approved solderless lugs. If any type of pressure indent type connector is proposed for use on any size conductor, it shall be specifically submitted for approval prior to use.

Taping of joints shall be done with rubber compound and friction tape, or with vinyl plastic as manufactured by Minnesota Mining & Manufacturing Company, or an approved equal.

Wire sizes shown are minimum based on code requirements, voltage drop and/or other considerations. Larger sizes may be installed at the Contractor's option to utilize stock sizes, provided conduit sizes are increased where necessary to conform to the National Electrical Code. Sizes of wires and cables indicated or specified are American wire gauge (Brown and Sharpe).

20. OUTLET BOXES, PULL BOXES AND CONDUIT FITTINGS:

Furnish and install outlet boxes, and conduit fittings as described below. PVC catalog numbers shown are Carlon Electric Company. Steel catalog numbers shown are Appleton Electric Company. Steel City, National Electric Products Company, and Rayco are equally acceptable.

A. Outlet Boxes.

Switch, Receptacles, Telephone and Junction Boxes (flush)	- Where separate extension or plastering cannot be used.
Switch, Receptacle and Telephone Boxes (exposed)	- FS Series

Exterior boxes shall be FS Series with suitable cover and Neoprene gaskets.

Where space is limited, No. 4CS-1/2 handy boxes may be used for switch, receptacle and telephone outlets with specific approval only.

Extension and plaster rings shall be installed where required.

Outlet boxes shall comply with the National Electrical Code in regard to the allowable fill.

- B. Pull Boxes. Pull boxes shall be fabricated of code thickness PVC sized or of code gauge galvanized sheet metal as per National Electrical Code or as shown on the drawings. Provide removable cover on the largest access side of the box.
- C. Conduit Fittings. Carlon Electric Company standard or as follows.
- | | |
|---|--------------|
| Couplings (EMT) | - Series 95T |
| Connectors (EMT) | - Series 96T |
| Insulating Bushings (1-1/4" rigid conduit and larger) | - Series BBU |
| Straight Box Connectors (flexible conduit) | - Series 728 |
| Angle Box Connectors (Flexible conduit) | - Series 738 |

21. ELECTRICAL EQUIPMENT CONNECTIONS:

A. The Mechanical Contractor shall furnish all equipment pertaining to his work, including motors, relays, temperature and pressure control devices, electrically operated valves and dampers and other control and protective devices. Motor starters except in prewired units, starting devices and disconnect switches shall be furnished and installed by the Electrical Contractor.

B. The Mechanical Contractor will install all mechanical equipment. The Electrical Contractor will wire all equipment except those requiring only low voltage electrical connections, such as thermostats, etc. These low voltage items when furnished by the Mechanical Contractor shall be installed and wired by same. The Electrical Contractor shall provide necessary conduit and boxes as required to locations shown on the plans.

C. The Mechanical Contractor shall set motors pertaining to his work.

D. Wiring shall be in accordance with the drawings and specifications and per approved wiring diagrams, which will be submitted by the mechanical contractor.

22. WIRING DEVICES:

Where shown on the drawings, furnish and install wiring devices indicated by the symbols. Catalog numbers shown are those of Leviton unless otherwise indicated, color to be selected by Architect.

A. Receptacles. All receptacles shall be of the type indicated as follows:

- | | |
|--|-----------------------------------|
| Duplex Convenience Receptacles
(Grounding Type) | - CR20 Series |
| Weatherproof Duplex Receptacles
(Ground Type) | - GFC1 6899 Series w/6196-V cover |

B. Plates. Furnish and install wall plates for all wiring devices. Plates shall be brushed stainless steel in all areas except Nylon covers may be provided for hidden boxes above ceilings and in the janitor's closet and basement mechanical rooms. Plate shall be of a type designed to fit the box. Blank covers shall be installed on all boxes, without devices or fixtures, of same type as installed on devices in the room or area. Color shall be selected by the architect or owner.

23. MOUNTING HEIGHTS:

Mounting heights to center of box above finished floor for the below-named items shall be as follows, unless otherwise shown:

Switches	48"
Convenience outlets	12" in office, 48" in janitor closets and mechanical rooms, as indicated in kitchen and rest rooms.
Safety switches	54"
Motor controllers	54"
Panelboards, to top	72"
Telephone outlets	12"

Note: verify exact mounting heights with Architect prior to installation.

END OF ...

SPECIFICATIONS

FOR A

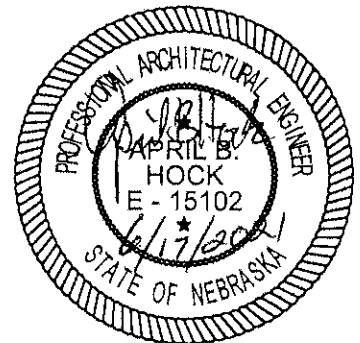
JR. HIGH AIR QUALITY PROJECT

FOR

McCOOK PUBLIC SCHOOLS

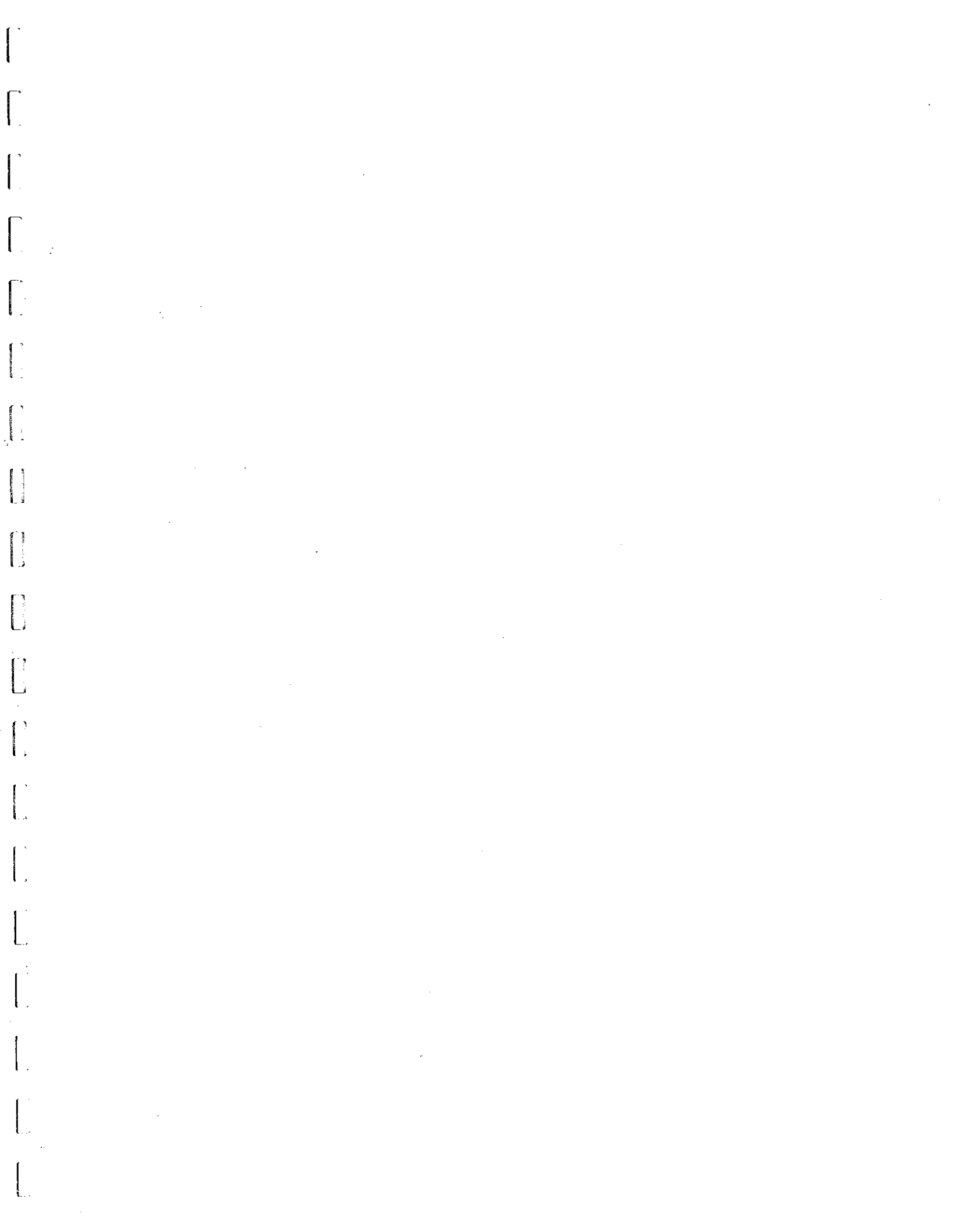
McCOOK, NEBRASKA

JUNE, 2021



**W DESIGN ASSOCIATES
CONSULTING ARCHITECTS & ENGINEERS
McCOOK/HASTINGS, NEBRASKA**

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DESIGN ASSOCIATES
architecture. engineering. consulting.

July 8, 2021

McCook Public Schools
 700 West 7th Street
 McCook, NE 69001

FEE ESTIMATE

Architectural/Engineering Services for McCook Jr. High Air Quality Project
 Per Agreement dated May 2021

	500,000.00	9.00%	\$	45,000.00
	500,000.00	8.50%	\$	42,500.00
	<u>529,500.00</u>	8.00%	\$	<u>42,360.00</u>
Fee on Base Bid plus Alternates	1,529,500.00		\$	129,860.00

Design Phase	70%	\$	90,902.00
Bidding Phase	10%	\$	<u>12,986.00</u>

Phases Complete and Payable \$ 103,888.00

Construction Phase

	500,000.00	9.00%	\$	45,000.00			
	<u>472,500.00</u>	8.50%	\$	<u>40,162.50</u>			
Fee on Base Bid	972,500.00		\$	85,162.50	20%	\$	17,032.50
	27,500.00	8.50%	\$	2,337.50			
	<u>151,800.00</u>	8.00%	\$	<u>12,144.00</u>			
Fee on Alternate #1	179,300.00		\$	14,481.50	20%	\$	2,896.30
Fee on Alternate #2	99,100.00	8.00%	\$	7,928.00	20%	\$	1,585.60
Fee on Alternate #3	95,600.00	8.00%	\$	7,648.00	20%	\$	1,529.60
Fee on Alternate #4	57,300.00	8.00%	\$	4,584.00	20%	\$	916.80
Fee on Alternate #5	125,700.00	8.00%	\$	10,056.00	20%	\$	<u>2,011.20</u>

Construction Phase Total \$ 25,972.00