CITY OF RIVERSIDE
CITY COUNCIL MEETING AGENDA
RIVERSIDE CITY COUNCIL CHAMBERS
60 GREENE ST
RIVERSIDE, IOWA 52327

Tuesday, February 18, 2025 @ 6:00 PM

The meeting will be recorded and can be viewed live by visiting the city website at www.riversideiowa.gov.

NOTICE TO THE PUBLIC: This is a meeting of the City Council to conduct the regular business of the city. Every item on the agenda is an item of discussion and action if needed.

1. Call meeting to order
2. Roll Call
3. Approval of Agenda
4. Consent Agenda
    a. Minutes
    b. Expenditures
    c. Fire Department Report pg 6
5. **Public forum: 3 minutes per person. See guidelines for public comments at the Clerk's table.**
6. Public Hearing – Security & Access Control pg 7
    a. Consider resolution to approve plans, scope of work, cost estimate, and bid letting process for the Security & Access Control Project (2025-13) pg 157
7. Washington County Sheriff's Department Report pg 158
8. PeopleService Report pg 166
9. City Engineer's Report (Axiom Consultants) pg 173
    a. PCC Improvements
    b. Community Center
    c. Cherry Lane Extension
    d. Pickleball Courts
    e. CDBG Downtown Revitalization
    f. Building Inspections
    g. Security and Access Controls
    h. Miscellaneous
10. City Administrator's Report
    a. WCRF Municipal Grant Application – Community Center pg 176
    b. Solid Waste & Recycling Proposals pg 181
        i. Consider resolution to award contract for Solid Waste & Recycling Collection Services (2025-14) pg 182
    c. UV Disinfection System pg 183
        i. Consider resolution to approve Pay Request #2 to WRH, Inc. (2025-15) pg 188
    d. Building Inspections
        i. Consider resolution to approve contract with Goerdt Inspections and Consultation Services, LLC for building inspection and code enforcement services (2025-16) pg 189

e. January Financials pg 190

11. Closing Comments

12. Motion to Adjourn

RIVERSIDE CITY COUNCIL MEETING: Monday, February 03, 2025

The Riverside City Council meeting started at 6:00 pm in the Riverside City Council Chambers. Mayor Allen Schneider called the meeting to order with Ryan Rogerson, Kevin Kiene, Lois Schneider and Kevin Mills present. Tom Sexton was absent.

Rogerson moved, second by Kiene to approve the agenda. Passed 4-0.

Rogerson moved, seconded by Mills to approve the consent agenda of minutes and expenditures. Passed 4-0.

Kelli Schneider, Riverside Casino & Golf Resort, presented a $332.21 donation from the Winning Hands Program.

Mary Audia, Washington Economic Development Group, presented an annual report and made a request of $6,000 for a WEDG Advisory Level Investment for FY2026.

Olivia Kahler, Kalona Public Library, presented an annual report and made a funding request of $40,000 for FY2026 library services.

Kiene motioned, seconded by Schneider to pass Resolution 2025-07 approving the FY2026 Contract for Services with the Kalona Public Library. Passed 4-0.

Motion made by Rogerson, seconded by Schneider to open Cherry Lane Street Extension Project Public Hearing at 6:31 pm. Passed 4-0.

No comments were made by the public.

Motion made by Kiene, seconded by Rogerson to close the Public Hearing at 6:32 pm. Passed 4-0.

Motioned by Rogerson, seconded by Kiene to pass Resolution 2025-08 approving the final plans, cost estimate, and bid letting process for the Cherry Lane Street Extension Project. Passed 4-0.

Motion made by Kiene, seconded by Rogerson to open Hall Park Pickle Ball Courts Project Public Hearing at 6:43 pm. Passed 4-0.

City Admin Smith reported comments from Julie Shebek and Shelia Mast. Both requested benches be made available and lighting be considered in the future. Additionally, both Shebek and Mast expressed their excitement for the project. No other comments were submitted or made.

Motion made by Kiene, seconded by Schneider to close the Public Hearing at 6:49 pm. Passed 4-0.

Motioned by Rogerson, seconded by Schneider to pass Resolution 2025-09, approving the final plans, cost estimate, and bid letting process for the Hall Park Pickleball Courts Project. Passed 4-0.

City Admin Smith gave an update on the City Engineer's Report consisting of updates on PCC Improvements, Community Center, Cherry Lane Street Extension Project, Hall Park Pickleball

Courts, City Facility Security & Access Control Project, CDBG Downtown Revitalization Project and Building Inspections.

Kiene motioned, seconded by Mills to pass Resolution 2025-10 setting the date of March 3rd, 2025, for Public Hearing and Awarding of Contract for the Cherry Lane Street Extension Project. Passed 4-0.

Schnieder motioned, seconded by Rogerson to pass Resolution 2025-11 setting the date of March 3rd, 2025, for Public Hearing and Awarding of Contract for the Hall Park Pickleball Courts Project. Passed 4-0.

Mills motioned, seconded by Rogerson to pass Resolution 2025-12, setting the date of February 18th, 2025, for Public Hearing and Bid Letting for the Security and Access Control Project. Passed 4-0.

Schneider motioned, seconded by Mills to approve the training request of $2,142.00 for City Clerk, Stephanie Thomann, to attend the Iowa Municipal Professionals Institute for 2025. Passed 4-0.

Schneider motioned, seconded by Kiene to approve the training request of $350.00 for City Administrator, Cole Smith, to attend the Iowa Municipal Management Institute, March 26-28, 2025. Passed 4-0.

Kiene motioned, seconded by Schneider to table generator repairs until the next meeting. Passed 4-0.

Schneider moved, second by Rogerson to adjourn at 7:16 pm. Passed 4-0.

Full content of city council meetings can be viewed on the city website www.riversideiowa.gov.

Monday, February 10th, 2025 at 6:00 pm – Work Session

Tuesday, February 18th, 2025 at 6:00 pm – City Council Meeting

Monday, March 3rd, 2025 at 6:00 pm – City Council Meeting

ATTEST:

Stephanie Thomann

Stephanie Thomann, City Clerk

Allen Schneider

Allen Schneider, Mayor

	EXPENDITURES FEBRUARY 18, 2025				
	COUNCIL MEETING	**BILLS**			
1	AIRGAS	FD-EMS	002-5-150-6375	$434.80	
2	A TECH	FD	002-5-150-6356	$84.00	
3	BULLTOWN REPAIR	1990 GMC REPAIRS & MAIN.	110-5-210-6331	$3,639.81	
4	DAKOTA SUPPLY	PLOW BLADE	110-5-210-6335	$380.00	
5	ECICOG	DTR	145-5-650-6435	$1,275.00	
6	FIRST RESPONSE EXTINGUISHER SERVICE	ANNUAL SERVICE	002-5-150-6356	$321.20	
7	IAMRESPONDING	FD-SUBSCRIPTION	002-5-150-6356	$809.00	
8	IOWA PAPER	SHOP TOWELS	001-5-210-6372	$57.38	
9	IOWA PAPER	CITY HALL TOWELS	001-5-650-6506	$57.38	$114.76
10	IOWA SOLUTIONS	COMPUTER - MONTHLY CK	001-5-650-6497	$838.50	
11	IOWA SOLUTIONS	JAN SERVICE CALLS & LAPTOP	001-5-650-6497	$3,025.00	$3,863.50
12	MARTIN GARDNER	DWTN FAÇADE	145-5-650-6435	$1,208.25	
13	MENARDS	FD	002-5-150-6356	$129.62	
14	OFFICE EXPRESS	OFFICE CHAIR	001-5-650-6506	$408.70	
15	NAPA	SHOP SUPPLIES	001-5-210-6372	$53.44	
16	NAPA	FD	002-5-150-6352	$181.62	
17	PYRAMID	MOWER MAINTENANCE	001-5-430-6504	$594.65	
18	REC	SIGN	001-5-520-6510	$66.67	
19	REC	LIFT STATION	610-5-815-6371	$93.30	
20	REC	W/W PLANT	610-5-815-6371	$4,023.50	
21	REC	WATER PLANT	600-5-810-6371	$4,275.20	
22	REC	TRAFIC LIGHT	001-5-230-6371	$153.33	
23	REC	SHOP	001-5-210-6371	$58.18	
24	REC	CASINO L/S	610-5-815-6371	$287.30	$8,957.48
25	SCHNOEBELEN INC	UPS	610-5-815-6374	$101.10	
26	SCHNOEBELEN INC	UPS	600-5-810-6374	$101.11	$202.21
27	STANDARD PEST CONTROL	MONTHLY SERVICE	001-5-650-6310	$25.00	
28	STANDARD PEST CONTROL	MONTHLY SERVICE	002-5-150-6310	$25.00	
29	STANDARD PEST CONTROL	MONTHLY SERVICE	001-5-210-6507	$25.00	
30	THE NEWS	PUBLICATIONS	001-5-650-6402	$633.46	
	TOTAL BILLS********			**$23,366.50**	
	IPERS	CONTRIBUTIONS - JAN 2025		$3,198.89	
	1ST NAT'L BANK	HEALTH SAVINGS		$716.68	
	IOWA DEPT OF REVENUE	IOWA W/HOLD - JAN 2025		$488.77	
	IOWA DEPT OF REVENUE	IOWA SALES TAX - JAN 2025		$685.41	
	IOWA DEPT OF REVENUE	IOWA WET TAX - JAN 2025		$1,385.03	
	IRS	941 TAX DEPOSIT - JAN 2025		$4,587.69	
	PAYROLL	PAYROLL - JAN 2025		$15,278.17	
	**********	**TOTAL PAID BILLS**	**$26,340.64**		
	**********	**TOTAL EXPENDITURES**	**$49,707.14**		
	EXPENDITURES by FUND				
	GENERAL FUND		$ 5,996.69		
	FIRE DEPARTMENT		$ 1,985.24		
	ROAD USE FUND		$ 4,019.81		
	CASINO		$ 2,483.25		
	CAPITAL PROJECTS		$ -		
	WATER FUND		$ 4,376.31		
	SEWER FUND		$ 4,505.20		
	TOTAL EXPENDITURES		**$ 23,366.50**		
	MTD TREASURERS REPORT	**REVENUES**	**EXPENSES**	**BALANCE**	
	1/31/2025				
	GENERAL FUND	$ 13,371.69	$ 142,880.73	$ 443,287.73	
	FIRE DEPT FUND	$ 11,076.84	$ 9,120.71	$ 270,899.77	
	ROAD USE TAX FUND	$ 13,374.34	$ 2,932.47	$ 168,595.04	
	LOCAL OPTION SALES TAX	$ 17,233.61	$ -	$ 91,464.22	
	TIF REVENUE	$ -	$ -	$ 9,505.26	
	CASINO REVENUE RUND	$ 131,440.62	$ 4,479.41	$ 1,794,531.77	
	CAPITAL PROJECTS FUND	$ 2,752.46	$ 20,606.19	$ 568,304.11	
	COMMUNITY CENTER FUNDS	$ 1,545.48	$ 8,650.00	$ 1,454,933.39	
	WATER FUND	$ 27,509.50	$ 28,948.69	$ 148,724.57	
	SEWER FUND	$ 28,311.22	$ 51,065.59	$ 561,102.83	
	STORM WATER FUND	$ 1,735.96	$ -	$ 13,226.89	
	TOTAL	**$ 248,351.72**	**$ 268,683.79**	**$ 5,524,575.58**	

RIVERSIDE FIRE DEPARTMENT

FIRE / RESCUE / EMS / HAZMAT

January 2025 Update

Calls for Service:

Medicals – 15
Brush/Grass Fire - 4
Building Fire Response – 4
Fire Standby - 1

Total calls – 24 calls in January

Training:

The training for January covered fire ground operations and pumping of fire apparatus.

RESA: The members have begun planning for the annual pancake breakfast. This event is on Sunday April 13th at RFD. The annual RESA board of directors meeting was held in January.

Other News:

RFD Chief instructed a class for all the dispatchers on fire ground operations for Washington County. This class covered emergency response to all types of incidents and was a joint training instruction with Kalona and Washington Fire Chief's. There was a Washington County Fire meeting held at Wellman FD attended by RFD personnel. We had a busy month with grass fires for winter time, the cold weather resulted in some damage to some plumbing on a brush truck and the tanker. These items have been fixed by RFD personnel and resulted in minimal downtime due to the members having skills and knowledge to fix our equipment. RFD responded to 264 emergencies in 2024, more to come on this at annual report in March.

Proudly Serving
Chief Smothers

PROJECT MANUAL FOR:

CITY OF RIVERSIDE ACCESS CONTROLS

Riverside, IA

January 29th, 2025

INFORMATION

Bids Due: March 14th, 2025, at 2:00 p.m.

Bid Location: Quest CDN Website

300 S CLINTON STREET, SUITE 200, IOWA CITY, IOWA 52240 | 319.519.6220

2330 12th STREET SW, CEDAR RAPIDS, IA 52404 | 319.519.6220

AXIOM PROJECT #: 24-0139

SECTION 00 0102
PROJECT INFORMATION

PART 1 GENERAL

1.1 PROJECT IDENTIFICATION

A. Project Name: City of Riverside Security Upgrades.
B. Engineer's Project Number: 24-0139.
   Location: Multiple Locations, see Section 1.3 Project Description.
   Riverside, Iowa.
C. The Owner, hereinafter referred to as Owner: City of Riverside.
D. Owner's Project Manager: Axiom Consultants, LLC.
   1. Project Lead: Kevin McLaughlin.
   2. Address: 300 S Clinton Street, Suite 200.
   3. City, State, Zip: Iowa City, IA 52240.
   4. Phone: (815) 985-3549.
   5. E-mail: kmclaughlin@axiom-con.com.

1.2 NOTICE TO PROSPECTIVE BIDDERS

A. These documents constitute an Invitation to Bid to General Contractors for the construction of the project described below.
B. Pre-Bid Meeting will be held on February 27, 2025 at 2:00 PM, at Riverside City Hall - City Council Chambers, 60 Greene Street, Riverside, Iowa 52327. Contractors are encouraged to attend.

1.3 PROJECT DESCRIPTION

A. Summary Project Description: The City of Riverside will be retrofitting six (6) city facilities with cloud-based surveillance cameras and access control. The cloud-based system shall allow remote access to the facilities cameras, recorded video and access control system. Among the facilities being upgraded are the Fire Station, City Hall, City Shop, Wastewater Treatment Plant (WWTP), Water Treatment Plant (WTP) and Water Tower. In addition to these updates, two (2) motorized sliding gates shall be designed and installed by the contractor at the WWTP and WTP with each having a pole mounted camera and pedestal mounted card reader.
B. Contract Scope: Construction.
C. Contract Terms: Lump Sum
D. The sites are secured and will need to be viewed during the preconstruction meeting or by scheduled follow-up visit.
E. Contractors to note that City of Riverside's annual Trek Fest will be held June 26 through June 29, 2025. Work at the Fire Station or City Hall will not be allowed during the week leading up to Trek Fest and during festival dates. Contractor to coordinate with Owner in order for the work for these two sites be completed earlier in the construction schedule to avoid festival conflicts.

1.4 PROCUREMENT TIMETABLE

A. Last Request for Substitution Due: 3 days prior to due date of bids.
   1. Specialty Substitution: Please see plan notes and specfications for substitution details regarding manufacturing demonstrations reqiured for both 28 1000 Access Control and 28 2000 Video Survellance manufacturers.
B. Last Pre-Bid Request for Clarification Due: 2 days prior to due date of bids.
C. Bid Due Date: March 14, 2025, before 2 PM local time, via vBid on line through QuestCDN.
   1. To submit a vBid online bid (which is required for this project), you must download the project bid document file from QuestCDN which will add you to the Planholders List and gain you access to vBid Online Bidding. Bidders will not be charged a fee to submit a bid electronically.

2. See Section 1.5 Procurement Documents for additional QuestCDN information.

D. Bid Opening: March 14, 2025, 2:01 PM local time.
   1. A virtual bid opening will be held. Join the bid opening conference from your computer, tablet, or smartphone. All plan holders will receive information via Quest on how to join the virtual meeting prior to the bid opening.
E. Notice to Proceed: First council meeting following the bid Opening: April 7, 2025.
F. Construction Start: Following Notice to Proceed on April 11, 2025.
G. Overall Punch List/Walk Through Date: July 15, 2025.
H. Overall Substantial Completion Date: Not later than July 15, 2025.
I. Overall Final Completion Date: Not later than July 31, 2025.
J. Liquidated Damages: Not Applicable.
K. The Owner reserves the right to change the schedule or terminate the entire procurement process at any time.
L. Permitting will be required by the City of Riverside, but the fee will be waived.
M. This project is sales tax exempt. Tax exempt certificates will be issued by the City of Riverside to the awarded contractors.

1.5 PROCUREMENT DOCUMENTS

A. Availability of Documents:
   1. Complete sets of procurement documents may be obtained from www.QuestCDN.com by selecting this project from the **PROJECT BID** link under the **RESOURCES** tab and inputing QuestCDN **#9499923** on the website's **Browse Project Search** field.
   2. Non-refundable charge of $50.00 to obtain documents.
   3. A contractor may view the contract documents at no cost prior to becoming a Planholder.
   4. Contact QuestCDN.com at 952-233-1632 or info@questcdn.com for assistance in membership registration, downloading this digital project information and vBid Online Bid Submittal.

1.6 INSURANCE REQUIREMENTS FOR CITY OF RIVERSIDE

A. The Contractor must provide a certificate of insurance showing coverage in the required amounts prior to project commencement and throughout the construction period with the following minimum amounts:
   1. Workmen's compensation and occupational disease insurance in accordance with the laws of the State of Iowa covering all employees who perform any obligations assumed under the contract.
   2. Public liability and property damage liability insurance covering all operations under the contract; limits of bodily injury or death and property damage of $1,000,000 for each accident; and $1,000,000 aggregate for accidents during the policy period on a per project basis. The Owner and Engineer shall be named additional insured on the Contractor's insurance.
   3. Automobile liability insurance on all self-propelled vehicles used in connection with the contract, whether owned, non-owned, or hired; public liability limits of not less than $500,000 for one person and $1,000,000 for each accident; property damage limit of $500,000 for each accident.
B. Owner reserves the right to approve the insurance company.

PART 2 PRODUCTS - (NOT USED)

PART 3 EXECUTION - (NOT USED)

END OF SECTION

SECTION 00 0104
DISCLAIMER

USE OF THIS DOCUMENT

1.1 THIS SPECIFICATION MANUAL COMPRISES ONE-HALF OF A COMPLETE SET OF DESIGN DOCUMENTS. WHEN COMBINED WITH THE CORRESPONDING PLAN-SET OF THE SAME NAME, THESE TWO DOCUMENTS CREATE A COMPLETE DESIGN.

1.2 THE AFOREMENTIONED DOCUMENTS MUST BE UTILIZED TOGETHER TO FULLY DETERMINE DESIGN REQUIREMENTS AND INTENT.

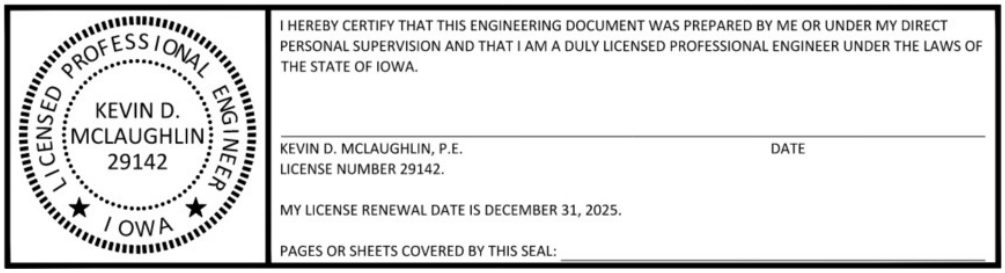
1.3 ALL ATTEMPTS HAVE BEEN MADE TO SYNCHRONIZE DATA BETWEEN THE PLANS AND SPECIFICATIONS AND ENSURE THE CONSISTENCY OF THAT DATA.

1.4 DISCREPANCIES NOTED BY THE CONTRACTOR SHOULD BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE DESIGN TEAM SO THAT THEY MAY REPLY WITH FORMAL CLARIFICATIONS.

1.5 ASSUMPTIONS MADE BY THE CONTRACTOR REGARDING THE INTENDED DESIGN FOR ITEMS THAT INCLUDE A DISCREPANCY SHALL NOT BE JUSTIFICATION FOR INCREASED COST CLAIMS TO THE OWNER IF CLARIFICATIONS ARE NOT REQUESTED FOR SAID ITEMS.

1.6 IN THE EVENT THAT CLARIFICATION FOR SAID ITEMS IS NOT REQUESTED, THE STRICTER SPECIFICATION SHALL GOVERN. 'STRICTER SPECIFICATION' SHALL MEAN, ALL THINGS BEING EQUAL, THAT REQUIREMENT WHICH REQUIRES MORE WORK, MORE COMPLEXITY, AND MORE COST.

SECTION 00 0107
SEALS PAGE



I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA.

KEVIN D. MCLAUGHLIN, P.E. DATE
LICENSE NUMBER 29142.

MY LICENSE RENEWAL DATE IS DECEMBER 31, 2025.

PAGES OR SHEETS COVERED BY THIS SEAL: _____

END OF SECTION

SECTION 00 0110
TABLE OF CONTENTS

END OF SECTION

SECTION 00 1113 - NOTICE TO BIDDERS AND NOTICE OF PUBLIC HEARING

JURISDICTION OF CITY OF RIVERSIDE PUBLIC IMPROVEMENT PROJECT

Notice is hereby given that a public hearing will be held by City of Riverside on the proposed contract documents (plans, specifications, and form of contract) and estimated cost for the improvement at its meeting at 6:00 P.M. on February 18, 2025 in the City Council Chambers located at the Riverside City Hall, 60 Greene Street in Riverside, Iowa for the City of Riverside's Security Upgrades Project.

Sealed bids will only be received and accepted electronically through QuestCDN.com via the electronic VirtuBid online bid service. The online bid portal will be open for vBid by Wednesday, February 19, 2025. No paper bids will be accepted. All electronic bids must be submitted prior to 2:00 PM on Friday, ~~March 7, 2025~~ March 14, 2027 via QuestCDN vBid Online Bidding. No bids can be submitted at 2:00 PM.

A virtual bid opening will be held on Friday, ~~March 7, 2025~~ March 14, 2025 at 2:01 PM. Join the bid opening conference from your computer, tablet, or smartphone. All plan holders will receive information via Quest on how to join the virtual meeting prior to the bid opening.

During the virtual bid opening, sealed proposals will be opened and bids tabulated for consideration at the Monday, ~~March 17, 2025~~ April 7, 2025, City of Riverside's Council Meeting.

Work on the improvement shall be commenced immediately upon approval of the contract by the Council, and be completed as stated below.

Bidding information is available at www.QuestCDN.com for a non-refundable fee of $50. QuestCDN vBid system is located by selecting this project from the **PROJECT BID** link under the **RESOURCES** tab and inputting Quest CDN #9499923 on the website's **Browse Project Search** field. A contractor may view the contract documents at no cost prior to becoming a Planholder. Contact QuestCDN.com at 952-233-1632 or info@questcdn.com for assistance in membership registration, downloading this digital project information and vBid Online Bid Submittal. To submit a vBid online bid (which is required for this project), you must download the project bid document file from QuestCDN which will add you to the Planholders List and gain you access to vBid Online Bidding.

By virtue of statutory authority, preference will be given to products and provisions grown and coal produced within the State of Iowa, and to Iowa domestic labor, to the extent lawfully required under Iowa statutes.

In accordance with Iowa statutes, a resident bidder shall be allowed a preference as against a nonresident bidder from a state or foreign country if that state or foreign country gives or requires any preference to bidders from that state or foreign country, including but not limited to any preference to bidders, the imposition of any type of labor force preference, or any other form of preferential treatment to bidders or laborers from that state or foreign country. The preference allowed shall be equal to the preference given or required by the state or foreign country in which the nonresident bidder is a resident. In the instance of a resident labor force preference, a nonresident bidder shall apply the same resident labor force preference to a public improvement in this state as would be required in the construction of a public improvement by the state or foreign country in which the nonresident bidder is a resident.

GENERAL NATURE OF THE PUBLIC IMPROVEMENT

CITY OF RIVERSIDE SECURITY UPGRADES

Summary Project Description: The City of Riverside will be retrofitting six (6) city facilities with cloud-based surveillance cameras and access control. The cloud-based system shall allow remote access to the facilities cameras, recorded video and access control system. Among the facilities being upgraded are the Fire Station, City Hall, City Shop, Wastewater Treatment Plant (WWTP),

Water Treatment Plant (WTP) and Water Tower. In addition to these updates, two (2) motorized sliding gates shall be designed and installed by the contractor at the WWTP and WTP with each having a pole mounted camera and pedestal mounted card reader.

Each bidder shall accompany its bid with bid security as defined in Iowa Code Section 26.8, as security that the successful bidder will enter into a contract for the work bid upon and will furnish after the award of contract a corporate surety bond, in a form acceptable to the Jurisdiction, for the faithful performance of the contract, in an amount equal to 5% of the amount of the contract. The bidder's security shall be in the amount fixed in the Instruction to Bidders and shall be in the form of a cashier's check or a certified check drawn on an FDIC insured bank in Iowa or on an FDIC insured bank chartered under the laws of the United States; or a certified share draft drawn on a credit union in Iowa or chartered under the laws of the United States; or a bid bond on the form provided in the contract documents with corporate surety satisfactory to the Jurisdiction. The bid shall contain no condition except as provided in the specifications.

The City of Riverside reserves the right to defer acceptance of any bid for a period of sixty (60) calendar days after receipt of bids and no bid may be withdrawn during this period.

Each successful bidder will be required to furnish a corporate surety bond in an amount equal to 100% of its contract price. Said bond shall be issued by a responsible surety approved by City of Riverside and shall guarantee the faithful performance of the contract and the terms and conditions therein contained and shall guarantee the prompt payment of all material and labor, and protect and save harmless City of Riverside from claims and damages of any kind caused by the operations of the contract and shall also guarantee the maintenance of the improvement caused by failures in materials and construction for a period of two years from and after acceptance of the contract. The guaranteed maintenance period for new paving shall be four years.

The City of Riverside, in accordance with Title VI of the Civil Rights Act of 1964, 78 Stat. 252, 42U.S.C. 2000d to 2000d-4 and Title 49, Code of Federal Regulations, Department of Transportation, Subtitle A, Office of the Secretary, Part 21, Nondiscrimination in Federally-assisted programs of the Department of Transportation issued pursuant to such Act, hereby notifies all bidders that it will affirmatively insure that in any contract entered into pursuant to this advertisement, minority business enterprises will be afforded full opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, or national origin in consideration for an award.

Contractor shall fully complete the Base Bid project by (no later than) July 31, 2025, pending no granted delays by the City.

The City of Riverside does hereby reserve the right to reject any or all bids, to waive informalities, and to enter into such contract, or contracts, as it shall deem to be in the best interest of the jurisdiction.

A pre-bid conference will be held on February 27, 2025 at 2:00 P.M., in the City Council Chambers located at Riverside City Hall, 60 Greene Street, Riverside, Iowa. Immediately after the conference, a site tour will be conducted if necessary. Contractors are encouraged to attend.

THIS NOTICE IS GIVEN BY AUTHORITY OF THE CITY OF RIVERSIDE

ALLEN SCHNEIDER, MAYOR

CITY OF RIVERSIDE

PUBLISHED IN THE NEWSPAPER OF "THE NEWS"

END OF SECTION

SECTION 00 2113 - INSTRUCTIONS TO BIDDERS

All work within this project shall be constructed accordinding to the plans and specifications provided. Before submitting bids, review the requirements of Divisions 00 and 01, General Provisions and Covenants, in particular the sections regarding proposal requirements, bonding, contract execution and insurance requirements. Be certain that all documents have been completed properly, as failure to complete and sign all documents and to comply with the requirements listed below may cause bids to be rejected.

I. BID SECURITY

The bid security must be in the minimum amount of 5% of the total bid amount including all add alternates (do not deduct the amount of deduct alternates). Bid security shall be in the form of a cashier's check or a certified check, drawn on an FDIC insured bank in Iowa or drawn on an FDIC insured bank chartered under the laws of the United States; or a certified share draft drawn on a credit union in Iowa or chartered under the laws of the United States; or a bid bond executed by a corporation authorized to contract as a surety in Iowa or satisfactory to the Jurisdiction. The bid bond must be submitted on the enclosed Bid Bond form as no other bid bond forms are acceptable. All signatures on the bid bond must be original signatures in ink; facsimile (fax) of any signature or use of an electronic signature on the bid bond is not acceptable. Bid security other than said bid bond shall be made payable to City of Riverside. "Miscellaneous Bank Checks," and personal checks, as well as "Money Orders" and "Traveler's Checks" issued by persons, firms, or corporations licensed under Chapter 533C of the Iowa Code, are not acceptable bid security.

II. SUBMISSION OF THE PROPOSAL AND IDENTITY OF BIDDER

The proposal shall be sealed in an envelope, properly identified as the Proposal with the project title and the name and address of the bidder, and deposited with the Jurisdiction at or before the time and at the place provided in the Notice to Bidders. It is the sole responsibility of the bidder to see that its proposal is delivered to the Jurisdiction prior to the time for opening bids, along with the appropriate bid security sealed in a separate envelope identified as Bid Security and attached to the outside of the bid proposal envelope. Any proposal received after the scheduled time for the receiving of proposals will be returned to the bidder unopened and will not be considered. If the Jurisdiction provides envelopes for proposals and bid security, bidders shall be required to utilize such envelopes in the submission of their bids.

The following documents shall be completed, signed, and returned in the Proposal envelope. The bid cannot be read if any of these documents are omitted from the Proposal envelope.

1. PROPOSAL – Complete each of the following parts:
   - Part B – Acknowledgment of Addenda, if any have been issued
   - Part I – Identity of Bidder (including the Bidder Status Form)

     Sign the proposal. The signature on the proposal and all proposal attachments must be an original signature in ink signed by the same individual who is the Company Owner or an authorized Officer of the Company; copies or facsimile of any signature or electronic signatures will not be accepted. The Bidder Status Form is required by the Iowa Labor Commissioner, pursuant to the Iowa Administrative Code rule 875-156.2(1). The Bidder must complete and submit the Bidder Status Form, signed by an authorized representative of the Bidder, with their bid proposal. Under Iowa Administrative Code rule 875-156.2(1), failure to provide the Bidder Status Form with the bid may result in the bid being deemed non-responsive and may result in the bid being rejected. The Worksheet: Authorized to Transact Business from the Labor Commissioner is including on the following page and can be used to assist Bidders in completing the Bidder Status Form.

WORKSHEET: AUTHORIZATION TO TRANSACT BUSINESS

This worksheet may be used to help complete Part A of the Resident Bidder Status form. If at least one of the following describes your business, you are authorized to transact business in Iowa.

Y / N - My business is currently registered as a contractor with the Iowa Division of Labor.

Y / N - My business is a sole proprietorship and I am an Iowa resident for Iowa income tax purposes.

Y / N - My business is a general partnership or joint venture. More than 50 percent of the general partners or joint venture parties are residents of Iowa for Iowa income tax purposes.

Y / N - My business is an active corporation with the Iowa Secretary of State and has paid all fees required by the Secretary of State, has filed its most recent biennial report, and has not filed articles of dissolution.

Y / N - My business is a corporation whose articles of incorporation are filed in a state other than Iowa, the corporation has received a certificate of authority from the Iowa Secretary of State, has filed its most recent biennial report with the Secretary of State, and has neither received a certificate of withdrawal from the Secretary of state nor had its authority revoked.

Y / N - My business is a limited liability partnership which has filed a statement of qualification in this state and the statement has not been canceled.

Y / N - My business is a limited liability partnership which has filed a statement of qualification in a state other than Iowa, has filed a statement of foreign qualification in Iowa and a statement of cancellation has not been filed.

Y / N - My business is a limited partnership or limited liability limited partnership which has filed a certificate of limited partnership in this state, and has not filed a statement of termination.

Y / N - My business is a limited partnership or a limited liability limited partnership whose certificate of limited partnership is filed in a state other than Iowa, the limited partnership or limited liability limited partnership has received notification from the Iowa Secretary of state that the application for certificate of authority has been approved and no notice of cancellation has been filed by the limited partnership or the limited liability limited partnership.

Y / N - My business is a limited liability company whose certificate of organization is filed in Iowa and has not filed a statement of termination.

Y / N - My business is a limited liability company whose certificate of organization is filed in a state other than Iowa, has received a certificate of authority to transact business in Iowa and the certificate has not been revoked or canceled.

END OF SECTION

SECTION 00 4243 - PROPOSAL FORM

PROPOSAL

PROPOSAL PART A – SCOPE

The City of Riverside, hereinafter called the "Jurisdiction," has need of a qualified contractor to complete the work comprising the below referenced improvement. The undersigned Bidder hereby proposes to complete the work comprising the below referenced improvement as specified in the contract documents, which are officially on file with the Jurisdiction, in the office of the City of Riverside, at the prices hereinafter provided in Part C of the Proposal, for the following described improvements:

PROJECT DESCRIPTION: CITY OF RIVERSIDE SECURITY UPGRAD

Summary Project Description: The City of Riverside will be retrofitting six (6) city facilities with cloud-based surveillance cameras and access control. The cloud-based system shall allow remote access to the facilities cameras, recorded video and access control system. Among the facilities being upgraded are the Fire Station, City Hall, City Shop, Wastewater Treatment Plant (WWTP), Water Treatment Plant (WTP) and Water Tower. In addition to these updates, two (2) motorized sliding gates shall be designed and installed by the contractor at the WWTP and WTP with each having a pole mounted camera and pedestal mounted card reader.

PROPOSAL PART B – ACKNOWLEDGMENT OF ADDENDA

The Bidder hereby acknowledges that all addenda become a part of the contract documents when issued, and that each such addendum has been received and utilized in the preparation of this bid. The Bidder hereby acknowledges receipt of the following addenda by inserting the number of each addendum in the blanks below:

Addendum Number: _____ Addendum Number: _____

Addendum Number: _____ Addendum Number: _____

and certifies that said addenda were utilized in the preparation of this bid.

PROPOSAL PART C – SPECIFICATIONS

The Bidder hereby acknowledges and certifies awareness that ALL applicable specifications and referenced standards shall apply to this project. If there are questions, bidders shall clarify during the bidding process.

PROPOSAL PART D – QUALITY ASSURANCE (TESTING)

The Bidder hereby acknowledges the Contractor shall be responsible for contracting and scheduling all material testing as noted and required in the specifications. Engineer shall manage, review and provide oversight on such testing and results.

PROPOSAL PART E – LUMP SUM PRICE

The project shall be based on a lump sum price to be provided by the bidding party. This price shall fully encompass all costs of materials and labor required on the project to complete the project

as designed and detailed. A breakdown of the lump sum pricing by division may be requested by the owner at any time.

PROPOSAL PART F – GENERAL

The Bidder hereby acknowledges that the Jurisdiction, in advertising for public bids for this project, reserves the right to:

1. Reject any or all bids. Award of the contract, if any, to be to the lowest responsible, responsive bidder; and
2. Reject any or all alternates in determining the items to be included in the contract. Designation of the lowest responsible, responsive bidder to be based on comparison of the total bid plus any selected alternates; and
3. Make such alterations in the contract documents or in the proposal quantities as it determines necessary in accordance with the contract documents after execution of the contract. Such alterations shall not be considered a waiver of any conditions of the contract documents, and shall not invalidate any of the provisions thereof; and

The Bidder hereby agrees to:

1. Enter into a contract, if this proposal is selected, in the form approved by the Jurisdiction, provide proof of registration with the Iowa Division of Labor in accordance with Chapter 91C of the Iowa Code, and furnish a performance, maintenance, and payment bond; and
2. Forfeit bid security, not as a penalty but as liquidated damages, upon failure to enter into such contract and/or to furnish said bond; and
3. Commence the work on the Base Bid project on or before a date to be specified in a written notice to proceed by the Jurisdiction, and to Substantially Complete the project July 15, 2025.
4. Commence the work on the Base Bid project on or before a date to be specified in a written notice to proceed by the Jurisdiction, and to have Final Completion of the project July 31, 2025.

PROPOSAL PART G – NON-COLLUSION AFFIDAVIT

The Bidder hereby certifies:

1. That this proposal is not affected by, contingent on, or dependent on any other proposal submitted for any improvement with the Jurisdiction; and
2. That no individual employed by the Bidder has employed any person to solicit or procure the work on this project, nor will any employee of the Bidder make any payment or agreement for payment of any compensation in connection with the procurement of this project; and
3. That no part of the bid price received by the Bidder was or will be paid to any person, corporation, firm, association, or other organization for soliciting the bid, other than the payment of their normal compensation to persons regularly employed by the Bidder whose services in connection with the construction of the project were in the regular course of their duties for the Bidder; and
4. That this proposal is genuine and not collusive or sham; that the Bidder has not colluded, conspired, connived, or agreed, directly or indirectly, with any bidder or person, to submit a sham bid or to refrain from bidding, and has not in any manner, directly or indirectly, sought, by agreement or collusion, or communication or conference, with any person, to fix the bid price of the Bidder or of any other bidder, and that all statements in this proposal are true; and
5. That the individual(s) executing this proposal have the authority to execute this proposal on behalf of the Bidder.

PROPOSAL PART H – ADDITIONAL REQUIREMENTS

Additional requirements are not applicable for this proposal.

PROPOSAL PART I – IDENTITY OF BIDDER

The Bidder shall indicate whether the bid is submitted by a/an:

☐ Individual, Sole Proprietorship
☐ Partnership
☐ Corporation
☐ Limited Liability Company
☐ Joint-Venture: all parties must join-in & executed all documents
☐ Other

The Bidder shall enter its Public Registration NUMBER ___ ___ ___ ___ ___ - ___ ___ ISSUED by the Iowa commissioner of labor pursuant SECTION 91C.5 OF THE IOWA CODE.

Failure to provide said Registration Number shall result in the bid being read under advisement. A contract will not be executed until the contractor is registered.

BIDDER (COMPANY NAME): _____

SIGNATURE: _____

NAME (PRINT/TYPE): _____

TITLE: _____

ADDRESS: _____

_____

TELEPHONE NUMBER: _____

Type or print the name and title of the company's Owner, President, CEO, etc., if a different person than entered above

NAME: _____

TITLE: _____

NOTE: THE SIGNATURE ON THIS PROPOSAL MUST BE AN ORIGINAL SIGNATURE IN INK; COPIES, FACSIMILES, OR ELECTRONIC SIGNATURES WILL NOT BE ACCEPTED.

ALL BIDDERS MUST SUBMIT THE FOLLOWING COMPLETED FORM TO THE GOVERNMENTAL BODY REQUESTING BIDS PER 875 IOWA ADMINISTRATIVE CODE CHAPTER 156.

BIDDER STATUS FORM

PART A - TO BE COMPLETED BY ALL BIDDERS

Please answer "Yes" or "No" for each of the following:

Y / N - My company is authorized to transact business in Iowa. (To help you determine if your company is authorized, please review the worksheet on the next page).

Y / N - My company has an office to transact business in Iowa.

Y / N - My company's office in Iowa is suitable for more than receiving mail, telephone calls, and e-mail.

Y / N - My company has been conducting business in Iowa for at least 3 years prior to the first request for bids on this project.

Y / N - My company is not a subsidiary of another business entity or my company is a subsidiary of another business entity that would qualify as a resident bidder in Iowa.

If you answered "Yes" for each question above, your company qualifies as a resident bidder. Please complete Parts B and D of this form.

If you answered "No" to one or more questions above, your company is a non-resident bidder. Please complete Parts C and D of this form.

Part B - TO BE COMPLETED BY RESIDENT BIDDERS

My company has maintained offices in Iowa during the past 3 years at the following addresses:

DATES: _____ **TO:** _____
(MM/DD/YYYY)
ADDRESS: _____
CITY, STATE, ZIP: _____

DATES: _____ **TO:** _____
(MM/DD/YYYY)
ADDRESS: _____
CITY, STATE, ZIP: _____

DATES: _____ **TO:** _____
(MM/DD/YYYY)
ADDRESS: _____
CITY, STATE, ZIP: _____

You may attach additional sheet(s) if needed.

PART C - TO BE COMPLETED BY NON-RESIDENT BIDDERS

1. Name of home state or foreign country reported to the Iowa Secretary of State:

_____

2. Does your company's home state or foreign country offer preferences to bidders who are residents:

☐ **Yes** ☐ **No**

3. If you answered "Yes" to question 2, identify each preference offered by your company's home state or foreign country and the appropriate legal citation.

_____

_____

You may attach additional sheet(s) if needed.

PART D - TO BE COMPLETED BY ALL BIDDERS

I certify that the statements made on this document are true and complete to the best of my knowledge and I know that my failure to provide accurate and truthful information may be a reason to reject my bid.

FIRM NAME: _____

SIGNATURE: _____ **DATE:** _____

PART E – LUMP SUM PRICE

Contract Price - The proposer will complete the work in accordance with contract documents for the following price(s): (enter all costs in both words and figures)

Lump Sum of:_____

($_____)

END OF SECTION

SECTION 00 4313 - BID BOND

SAMPLE BID BOND FORM

KNOW ALL BY THESE PRESENTS:

That we _____, as Principal, and _____, as Surety, are held and firmly bound unto _____, as Obligee, (hereinafter referred to as "the Jurisdiction"), in the penal sum of_____ _____ _____ dollars ($_____), or _____percent of the amount bid in lawful money of the United States, for which payment said Principal and Surety bind themselves, their heirs, executors, administrators, successors, and assigns jointly and severally, firmly by these presents.

The condition of the above obligation is such that whereas the Principal has submitted to the Jurisdiction a certain proposal, in a separate envelope, and hereby made a part hereof, to enter into a contract in writing, for the following described improvements;

Summary Project Description: The City of Riverside will be retrofitting six (6) city facilities with cloud-based surveillance cameras and access control. The cloud-based system shall allow remote access to the facilities cameras, recorded video and access control system. Among the facilities being upgraded are the Fire Station, City Hall, City Shop, Wastewater Treatment Plant (WWTP), Water Treatment Plant (WTP) and Water Tower. In addition to these updates, two (2) motorized sliding gates shall be designed and installed by the contractor at the WWTP and WTP with each having a pole mounted camera and pedestal mounted card reader.

(CONT. BID BOND)

NOW, THEREFORE, if said proposal by the Principal be accepted, and the Principal shall enter into a contract with Jurisdiction in accordance with the terms of such proposal, including the provision of insurance and of a bond as may be specified in the contract documents, with good and sufficient surety for the faithful performance of such contract, for the prompt payment of labor and material furnished in the prosecution thereof, and for the maintenance of said improvements as may be required therein, then this obligation shall become null and void; otherwise, the Principal shall pay to the Jurisdiction the full amount of the bid bond, together with court costs, attorney's fees, and any other expense of recovery.

Signed and sealed this _____ day of _____, 20____.

SURETY

SURETY COMPANY: _____

SIGNATURE ATTORNEY-IN-FACT/OFFICER:

_____

PRINTED ATTORNEY-IN-FACT/OFFICER:

_____

SURETY ADDRESS: _____

SURETY TELEPHONE NUMBER: _____

PRINCIPAL

BIDDER COMPANY: _____

BIDDER SIGNATURE:

_____

PRINTED NAME: _____

TITLE: _____

BIDDER ADDRESS: _____

BIDDER TELEPHONE NUMBER: _____

NOTE: All signatures on this bid bond must be original signatures in ink; copies, facsimile, or electronic signatures will not be accepted. This bond must be sealed with the Surety's raised, embossing seal. The certificate or power of attorney accompanying this bond must be valid on its face and sealed with the Surety's raised, embossed seal.

END OF SECTION

SECTION 00 4323
ALTERNATES FORM

PARTICULARS

1.1 THE FOLLOWING IS THE LIST OF ALTERNATES REFERENCED IN THE BID SUBMITTED BY:

1.2 (BIDDER) _____

1.3 TO (OWNER): CITY OF RIVERSIDE, IOWA

1.4 DATED _____ AND WHICH IS AN INTEGRAL PART OF THE BID FORM.

ALTERNATES LIST

2.1 THE FOLLOWING AMOUNTS SHALL BE ADDED TO OR DEDUCTED FROM THE BID AMOUNT. REFER TO SECTION 01 2300 - ALTERNATES FOR A FULL DESCRIPTION OF EACH ALTERNATE.

ALTERNATE # 1: ADD / (DEDUCT) $ _____

END OF SECTION

SECTION 00 6113 - PERFORMANCE, PAYMENT AND MAINTENANCE BOND

SAMPLE PERFORMANCE, PAYMENT AND MAINTENANCE BOND FORM

SURETY BOND NO. _____

PERFORMANCE, PAYMENT, AND MAINTENANCE BOND

KNOW ALL BY THESE PRESENTS:

That we, _____, as Principal (hereinafter the "Contractor" or "Principal" and _____, as Surety are held and firmly bound unto _____ , as Obligee (hereinafter referred to as "the Jurisdiction"), and to all persons who may be injured by any breach of any of the conditions of this Bond in the penal sum of _____ _____ dollars ($_____), lawful money of the United States, for the payment of which sum, well and truly to be made, we bind ourselves, our heirs, legal representatives and assigns, jointly or severally, firmly by these presents.

The conditions of the above obligations are such that whereas said Contractor entered into a contract with the Jurisdiction, bearing date the _____ day of _____, _____, hereinafter the "Contract") wherein said Contractor undertakes and agrees to construct the following described improvements:

Summary Project Description: City of Riverside will be retrofitting (6) city facilities with cloud-based a/v monitoring and door control hardware/software. The video monitoring analytics are able to recognize people, vehicles, license plates, and audio events such as glass break, gunshots, etc. The cloud-based system allows remote access to the facilities cameras, recorded video and door credentials. Among the facilities being upgraded are the Fire Station, City Hall, City Shop, Wastewater Treatment Plant and Water Treatment Plant. These upgrades will provide 24/7 monitoring and quick access to multiple doors via a card swipe or keypad.

and to faithfully perform all the terms and requirements of said Contract within the time therein specified, in a good and workmanlike manner, and in accordance with the Contract Documents. Provided, however, that one year after the date of acceptance as complete of the work under the above referenced Contract, the maintenance portion of this Bond shall continue in force but the penal sum for maintenance shall be reduced to the sum of _____DOLLARS ($_____), which is the cost associated with those items shown on the proposal and in the Contract that require a maintenance bond period in excess of one year.

It is expressly understood and agreed by the Contractor and Surety in this bond that the following provisions are a part of this Bond and are binding upon said Contractor and Surety, to-wit:

1. PERFORMANCE: The Contractor shall well and faithfully observe, perform, fulfill, and abide by each and every covenant, condition, and part of said Contract and Contract Documents, by reference made a part hereof, for the above referenced improvements, and shall indemnify and save harmless the Jurisdiction from all outlay and expense incurred by the Jurisdiction by reason of the Contractor's default of failure to perform as required. The

Contractor shall also be responsible for the default or failure to perform as required under the Contract and Contract Documents by all its subcontractors, suppliers, agents, or employees furnishing materials or providing labor in the performance of the Contract.

2. PAYMENT: The Contractor and the Surety on this Bond hereby agreed to pay all just claims submitted by persons, firms, subcontractors, and corporations furnishing materials for or performing labor in the performance of the Contract on account of which this Bond is given, including but not limited to claims for all amounts due for labor, materials, lubricants, oil, gasoline, repairs on machinery, equipment, and tools, consumed or used by the Contractor or any subcontractor, wherein the same are not satisfied out of the portion of the contract price the Jurisdiction is required to retain until completion of the improvement, but the Contractor and Surety shall not be liable to said persons, firms, or corporations unless the claims of said claimants against said portion of the contract price shall have been established as provided by law. The Contractor and Surety hereby bind themselves to the obligations and conditions set forth in Chapter 573 of the Iowa Code, which by this reference is made a part hereof as though fully set out herein.

3. MAINTENANCE: The Contractor and the Surety on this Bond hereby agree, at their own expense:

A. To remedy any and all defects that may develop in or result from all work except new paving to be performed under the Contract within the period of (2) years from the date of acceptance of the work under the Contract, by reason of defects in workmanship or materials used in construction of said work; and

B. To remedy any and all defects that may develop in or result from new paving work to be performed under the Contract within the period of (4) years from the date of acceptance of the work under the Contract, by reason of defects in workmanship or materials used in construction of said work;

C. To keep all work in continuous good repair; and

D. To pay the Jurisdiction's reasonable costs of monitoring and inspection to assure that any defects are remedied, and to repay the Jurisdiction all outlay and expense incurred as a result of Contractor's and Surety's failure to remedy any defect as required by this section.

E. Maintenance bond requirements shall not apply to the following: work that is not permanently incorporated into the project, pavement markings, seeding, sodding, and plant material and planting.

4. GENERAL: Every Surety on this Bond shall be deemed and held bound, any contract to the contrary notwithstanding, to the following provisions:

A. To consent without notice to any extension of time to the Contractor in which to perform the Contract;

B. To consent without notice to any change in the Contract or Contract Documents, which thereby increases the total contract price and the penal sum of this bond, provided that all such changes do not, in the aggregate, involve an increase of more than 20% of the total contract price, and that this bond shall then be released as to such excess increase; and

C. To consent without notice that this Bond shall remain in full force and effect until the Contract is completed, whether completed within the specified contract period, within an extension thereof, or within a period of time after the contract period has elapsed and the liquidated damage penalty is being charged against the Contractor.

D. That no provision of this Bond or of any other contract shall be valid that limits to less that five years after the acceptance of the work under the Contract the right to sue on this Bond.

E. That as used herein, the phrase "all outlay and expense" is not to be limited in any way, but shall include the actual and reasonable costs and expenses incurred by the Jurisdiction including interest, benefits, and overhead where applicable. Accordingly, "all outlay and expense" would include but not be limited to all contract or employee

expense, all equipment usage or rental, materials, testing, outside experts, attorneys fees (including overhead expenses of the Jurisdiction's staff attorneys), and all costs and expenses of litigation as they are incurred by the Jurisdiction. It is intended the Contractor and Surety will defend and indemnify the Jurisdiction on all claims made against the Jurisdiction on account of Contractor's failure to perform as required in the Contract and Contract Documents, that all agreements and promises set forth in the Contract and Contract Documents, in approved change orders, and in this Bond will be fulfilled, and that the Jurisdiction will be fully indemnified so that it will be put into the position it would have been in had the Contract been performed in the first instance as required.

In the event the Jurisdiction incurs any "outlay and expense" in defending itself against any claim as to which the Contractor or Surety should have provided the defense, or in the enforcement of the promises given by the Contractor in the Contract, Contract Documents, or approved change orders, or in the enforcement of the promises given by the Contractor and Surety in this Bond, the Contractor and Surety agree that they will make the Jurisdiction whole for all such outlay and expense, provided that the Surety's obligation under this bond shall not exceed 125% of the penal sum of this bond.

In the event that any actions or proceedings are initiated regarding this Bond, the parties agree that the venue thereof shall be Washington County, State of Iowa. If legal action is required by the Jurisdiction to enforce the provisions of this Bond or to collect the monetary obligation incurring to the benefit of the Jurisdiction, the Contractor and the Surety agree, jointly, and severally, to pay the Jurisdiction all outlay and expense incurred therefor by the Jurisdiction. All rights, powers, and remedies of the Jurisdiction hereunder shall be cumulative and not alternative and shall be in addition to all rights, powers, and remedies given to the Jurisdiction, by law. The Jurisdiction may proceed against surety for any amount guaranteed hereunder whether action is brought against the Contractor or whether Contractor is joined in any such action(s) or not.

NOW THEREFORE, the condition of this obligation is such that if said Principal shall faithfully perform all the promises of the Principal, as set forth and provided in the Contract, in the Contract Documents, and in this Bond, then this obligation shall be null and void, otherwise it shall remain in full force and effect.

When a word, term, or phrase is used in this Bond, it shall be interpreted or construed first as defined in this Bond, the Contract, or the Contract Documents; second, if not defined in the Bond, Contract, or Contract Documents, it shall be interpreted or construed as defined in applicable provisions of the Iowa Code; third, if not defined in the Iowa Code, it shall be interpreted or construed according to its generally accepted meaning in the construction industry; and fourth, if it has no generally accepted meaning in the construction industry, it shall be interpreted or construed according to its common or customary usage.

Failure to specify or particularize shall not exclude terms or provisions not mentioned and shall not limit liability hereunder. The Contract and Contract Documents are hereby made a part of this Bond.

(CON'T – PERFORMANCE, PAYMENT, AND MAINTENANCE BOND)

PRINCIPAL

CONTRACTOR: _____

SIGNATURE:

_____

TITLE: _____

SURETY

SURETY COMPANY: _____

SIGNATURE ATTORNEY-IN-FACT/OFFICER:

_____

PRINTED ATTORNEY-IN-FACT/OFFICER:

_____

ADDRESS: _____

TELEPHONE: _____

FORM APPROVED BY

ATTORNEY FOR JURISDICTION:

_____

NOTE:

1. All signatures on this performance, payment, and maintenance bond must be original signatures in ink; copies, facsimile, or electronic signatures will not be accepted.

2. This bond must be sealed with the Surety's raised, embossing seal.

3. The Certificate or Power of Attorney accompanying this bond must be valid on its face and sealed with the Surety's raised, embossing seal.

4. The name and signature of the Surety's Attorney-in-Fact/Officer entered on this bond must be exactly as listed on the Certificate or Power of Attorney accompanying this bond.

END OF SECTION

SECTION 01 2300
ALTERNATES

PART 1 GENERAL

1.1 SECTION INCLUDES
A. Description of Alternates.

1.2 RELATED REQUIREMENTS
A. Document 00 2113 - Instructions to Bidders: Instructions for preparation of pricing for Alternates.

1.3 ACCEPTANCE OF ALTERNATES
A. Alternates quoted on Bid Forms will be reviewed and accepted or rejected at Owner's option. Accepted Alternates will be identified in the Owner-Contractor Agreement.

1.4 SCHEDULE OF ALTERNATES
A. Alternate No. 1 - On Premises Solution:
   1. Base Bid Item:
      a. Description: The City of Riverside will be retrofitting six (6) city facilities with cloud-based surveillance cameras and access control. The cloud-based system shall allow remote access to the facilities cameras, recorded video and access control system. Among the facilities being upgraded are the Fire Station, City Hall, City Shop, Wastewater Treatment Plant (WWTP), Water Treatment Plant (WTP) and Water Tower. In addition to these updates, two (2) motorized sliding gates shall be designed and installed by the contractor at the WWTP and WTP with each having a pole mounted camera and pedestal mounted card reader.
   2. Alternate Item:
      a. Description: This item is to include all equipment, licenses (for 5 years), software and cabling for an on premises solution for access control and surveillance systems. Contractor shall provide a NVR at each site for surveillance system. NVR shall have storage as called out on the plans, either 6 or 12 TB. Provide a central server at City Hall that shall be capable of aggregating all data from the access control and surveillance systems and allowing Owner to access each system from any site or mobile device. The server shall be selected by the access control or surveillance system vendor and shall be agreed upon by both parties. Contractor shall coordinate with owner's IT Consultant to set up Wide Area Network (WAN) to interconnect each site and test functionality of system. Owner shall bear the cost of all IT related work associated with setting up WAN and Contractor to coordinate this work.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 2500
SUBSTITUTION PROCEDURES

PART 1 GENERAL

1.1 SECTION INCLUDES
A. Procedural requirements for proposed substitutions.

1.2 RELATED REQUIREMENTS
A. Section 01 3000 - Administrative Requirements: Submittal procedures, coordination.
B. Section 01 6000 - Product Requirements: Fundamental product requirements, product options, delivery, storage, and handling.

1.3 DEFINITIONS
A. Substitutions: Changes from Contract Documents requirements proposed by Contractor to materials, products, assemblies, and equipment.
   1. Substitutions for Cause: Proposed due to changed Project circumstances beyond Contractor's control.
      a. Unavailability.
      b. Regulatory changes.
   2. Substitutions for Convenience: Proposed due to possibility of offering substantial advantage to the Project.
      a. Substitution requests offering advantages solely to the Contractor will not be considered.

1.4 REFERENCE STANDARDS
A. CSI/CSC Form 1.5C - Substitution Request (During the Bidding/Negotiating Stage); Current Edition.
B. CSI/CSC Form 13.1A - Substitution Request (After the Bidding/Negotiating Phase); Current Edition.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.1 GENERAL REQUIREMENTS
A. A Substitution Request for products, assemblies, materials, and equipment constitutes a representation that the submitter:
   1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product, equipment, assembly, or system.
   2. Agrees to provide the same warranty for the substitution as for the specified product.
   3. Agrees to coordinate installation and make changes to other work that may be required for the work to be complete, with no additional cost to Owner.
   4. Waives claims for additional costs or time extension that may subsequently become apparent.
B. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents. Burden of proof is on proposer.
C. Content: Include information necessary for tracking the status of each Substitution Request, and information necessary to provide an actionable response.
   1. No specific form is required. Contractor's Substitution Request documentation must include the following:
      a. Project Information:

1) Official project name and number, and any additional required identifiers established in Contract Documents.
2) Owner's, Engineer's, and Contractor's names.

b. Substitution Request Information:
1) Discrete and consecutive Substitution Request number, and descriptive subject/title.
2) Indication of whether the substitution is for cause or convenience.
3) Issue date.
4) Reference to particular Contract Document(s) specification section number, title, and article/paragraph(s).
5) Description of Substitution.
6) Reason why the specified item cannot be provided.
7) Differences between proposed substitution and specified item.
8) Description of how proposed substitution affects other parts of work.

c. Attached Comparative Data: Provide point-by-point, side-by-side comparison addressing essential attributes specified, as appropriate and relevant for the item:

d. Impact of Substitution:
1) Savings to Owner for accepting substitution.
2) Change to Contract Time due to accepting substitution.

D. Limit each request to a single proposed substitution item.
1. Submit an electronic document, combining the request form with supporting data into single document.

3.2 SUBSTITUTION PROCEDURES DURING PROCUREMENT

A. Instructions to Bidders specifies time restrictions for submitting requests for substitutions during the bidding period, and the documents required.

3.3 SUBSTITUTION PROCEDURES DURING CONSTRUCTION

A. Submit request for Substitution for Cause within 14 days of discovery of need for substitution, but not later than 14 days prior to time required for review and approval by Engineer, in order to stay on approved project schedule.

B. Submit request for Substitution for Convenience immediately upon discovery of its potential advantage to the project, but not later than 14 days prior to time required for review and approval by Engineer, in order to stay on approved project schedule.
1. In addition to meeting general documentation requirements, document how the requested substitution benefits the Owner through cost savings, time savings, greater energy conservation, or in other specific ways.
2. Document means of coordinating of substitution item with other portions of the work, including work by affected subcontractors.
3. Bear the costs engendered by proposed substitution of:
a. Owner's compensation to the Engineer for any required redesign, time spent processing and evaluating the request.

3.4 RESOLUTION

A. Engineer may request additional information and documentation prior to rendering a decision. Provide this data in an expeditious manner.

B. Engineer will notify Contractor in writing of decision to accept or reject request.
1. Engineer's decision following review of proposed substitution will be noted on the submitted form.

3.5 ACCEPTANCE

A. Accepted substitutions change the work of the Project. They will be documented and incorporated into work of the project by Change Order, Construction Change Directive, Architectural Supplementary Instructions, or similar instruments provided for in the Conditions

of the Contract.

3.6 CLOSEOUT ACTIVITIES

A. See Section 01 7800 - Closeout Submittals, for closeout submittals.

B. Include completed Substitution Request Forms as part of the Project record. Include both approved and rejected Requests.

END OF SECTION

SECTION 01 3000
ADMINISTRATIVE REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. General administrative requirements.
B. Preconstruction meeting.
C. Progress meetings.
D. Construction progress schedule.
E. Contractor's daily reports.
F. Progress photographs.
G. Coordination drawings.
H. Submittals for review, information, and project closeout.
I. Number of copies of submittals.
J. Requests for Interpretation (RFI) procedures.
K. Submittal procedures.

1.2 RELATED REQUIREMENTS

A. Section 01 6000 - Product Requirements: General product requirements.
B. Section 01 7000 - Execution and Closeout Requirements: Additional coordination requirements.
C. Section 01 7800 - Closeout Submittals: Project record documents; operation and maintenance data; warranties and bonds.

1.3 REFERENCE STANDARDS

A. AIA G716 - Request for Information; 2004.
B. AIA G810 - Transmittal Letter; 2001.
C. CSI/CSC Form 12.1A - Submittal Transmittal; Current Edition.
D. CSI/CSC Form 13.2A - Request for Information; Current Edition.

1.4 GENERAL ADMINISTRATIVE REQUIREMENTS

A. Comply with requirements of Section 01 7000 - Execution and Closeout Requirements for coordination of execution of administrative tasks with timing of construction activities.
B. Make the following types of submittals to Engineer:
    1. Requests for Interpretation (RFI).
    2. Requests for substitution.
    3. Shop drawings, product data, and samples.
    4. Test and inspection reports.
    5. Design data.
    6. Manufacturer's instructions and field reports.
    7. Applications for payment and change order requests.
    8. Progress schedules.
    9. Coordination drawings.
    10. Correction Punch List and Final Correction Punch List for Substantial Completion.
    11. Closeout submittals.

1.5 PROJECT COORDINATOR

A. Project Coordinator: Axiom Consultants
B. During construction, coordinate use of site and facilities through the Project Coordinator.
C. Comply with Project Coordinator's procedures for intra-project communications; submittals, reports and records, schedules, coordination drawings, and recommendations; and resolution of ambiguities and conflicts.

D. Comply with instructions of the Project Coordinator for use of temporary utilities and construction facilities. Responsibility for providing temporary utilities and construction facilities is identified in Section 01 5000 - Temporary Facilities and Controls and Section 01 5100 - Temporary Utilities.
E. Coordinate field engineering and layout work under instructions of the Project Coordinator.
F. Make the following types of submittals to Engineer through the Project Coordinator:
    1. Requests for Interpretation.
    2. Requests for substitution.
    3. Shop drawings, product data, and samples.
    4. Test and inspection reports.
    5. Design data.
    6. Manufacturer's instructions and field reports.
    7. Applications for payment and change order requests.
    8. Progress schedules.
    9. Coordination drawings.
    10. Correction Punch List and Final Correction Punch List for Substantial Completion.
    11. Closeout submittals.
G. All correspondence associated with Section 1.5, F. is to be emailed to both Kevin McLaughlin Project Lead Engineeer, (kmclaughlin@axiom-con.com) and Adrianne Bricker, Coordinator, (abricker@axiom-con.com).

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.1 DOCUMENT SUBMITTAL METHOD

A. Informal
B. Will be done via email utilizing PDF or other approved format.

3.2 PRECONSTRUCTION MEETING

A. Project Coordinator will schedule a meeting after Notice of Award.
B. Attendance Required:
    1. Owner.
    2. Engineer.
    3. Contractor.
C. Agenda:
    1. Execution of Owner-Contractor Agreement.
    2. Submission of executed bonds and insurance certificates.
    3. Distribution of Contract Documents.
    4. Submission of list of subcontractors, list of products, schedule of values, and progress schedule.
    5. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.
    6. Scheduling.
D. Record minutes and distribute copies within two days after meeting to participants, with two copies to Engineer, Owner, participants, and those affected by decisions made.

3.3 PROGRESS MEETINGS

A. Project Coordinator will make arrangements for meetings, prepare agenda with copies for participants, preside at meetings.
B. Attendance Required:
    1. Contractor.

2. Owner.
3. Engineer.
4. Architect.
5. Special consultants.
6. Contractor's superintendent.
7. Major subcontractors.

C. Agenda:
1. Review minutes of previous meetings.
2. Review of work progress.
3. Field observations, problems, and decisions.
4. Identification of problems that impede, or will impede, planned progress.
5. Review of submittals schedule and status of submittals.
6. Maintenance of progress schedule.
7. Corrective measures to regain projected schedules.
8. Planned progress during succeeding work period.
9. Maintenance of quality and work standards.
10. Effect of proposed changes on progress schedule and coordination.
11. Other business relating to work.

D. Anticipated Schedule:
1. Bi-Weekly, unless otherwise agreed

E. Record minutes and distribute copies within two days after meeting to participants, with two copies to Engineer, Owner, participants, and those affected by decisions made.

3.4 CONSTRUCTION PROGRESS SCHEDULE

A. Within 10 days after date of the Agreement, submit preliminary schedule defining planned operations for the first 60 days of work, with a general outline for remainder of work.

3.5 WEEKLY CONSTRUCTION REPORTS

A. Include only factual information. Do not include personal remarks or opinions regarding operations and/or personnel.

B. Electronic transmittasl to Owner and Engineer at weekly intervals.
1. Submit in format acceptable to Owner.

C. Prepare a weekly report which includes daily construction report information in the following information concerning events at Project site and project progress:
1. Date.
2. High and low temperatures, and general weather conditions.
3. List of subcontractors at Project site.
4. List of separate contractors at Project site.
5. Major equipment at Project site.
6. Material deliveries.
7. Safety, environmental, or industrial relations incidents.
8. Meetings and significant decisions.
9. Stoppages, delays, shortages, and losses. Include comparison between scheduled work activities (in Contractor's most recently updated and published schedule) and actual activities. Explain differences, if any. Note days or periods when no work was in progress and explain the reasons why.
10. Directives and requests of Authority(s) Having Jurisdiction (AHJ).
11. Testing and/or inspections performed.
12. List of verbal instruction given by Owner and/or Engineer.
13. Signature of Contractor's authorized representative.

3.6 PROGRESS PHOTOGRAPHS

A. Photography Type: Digital; electronic files.

B. Provide photographs of site and construction throughout progress of work produced by general contractor project manager photographer, acceptable to Engineer.
C. In addition to periodic, recurring views, take photographs of each of the following events:
   1. Final completion, minimum of ten (10) photos.
D. Digital Photographs: 24 bit color, minimum resolution of 1024 by 768, in JPG format; provide files unaltered by photo editing software.
   1. Delivery Medium: Via email.

3.7 REQUESTS FOR INFORMATION (RFI)

A. Definition: A request seeking one of the following:
   1. An interpretation, amplification, or clarification of some requirement of Contract Documents arising from inability to determine from them the exact material, process, or system to be installed; or when the elements of construction are required to occupy the same space (interference); or when an item of work is described differently at more than one place in Contract Documents.
   2. A resolution to an issue which has arisen due to field conditions and affects design intent.
B. Whenever possible, request clarifications at the next appropriate project progress meeting, with response entered into meeting minutes, rendering unnecessary the issuance of a formal RFI.
C. Preparation: Prepare an RFI immediately upon discovery of a need for interpretation of Contract Documents. Failure to submit a RFI in a timely manner is not a legitimate cause for claiming additional costs or delays in execution of the work.
   1. Prepare a separate RFI for each specific item.
      a. Review, coordinate, and comment on requests originating with subcontractors and/or materials suppliers.
      b. Do not forward requests which solely require internal coordination between subcontractors.
   2. Prepare in a format and with content acceptable to Owner.
      a. Use AIA G716 - Request for Information .
      b. Use CSI/CSC Form 13.2A - Request for Interpretation.
   3. Prepare using software provided by the Electronic Document Submittal Service.
D. Reason for the RFI: Prior to initiation of an RFI, carefully study all Contract Documents to confirm that information sufficient for their interpretation is definitely not included.
   1. Unacceptable Uses for RFIs: Do not use RFIs to request the following::
      a. Approval of submittals (use procedures specified elsewhere in this section).
      b. Approval of substitutions (see Section - 01 6000 - Product Requirements)
   2. Improper RFIs: Requests not prepared in compliance with requirements of this section, and/or missing key information required to render an actionable response. They will be returned without a response, with an explanatory notation.
   3. Frivolous RFIs: Requests regarding information that is clearly indicated on, or reasonably inferable from, Contract Documents, with no additional input required to clarify the question. They will be returned without a response, with an explanatory notation.
E. Content: Include identifiers necessary for tracking the status of each RFI, and information necessary to provide an actionable response.
   1. Official Project name and number, and any additional required identifiers established in Contract Documents.
   2. Owner's, Engineer's, and Contractor's names.
   3. Discrete and consecutive RFI number, and descriptive subject/title.
   4. Issue date, and requested reply date.
   5. Reference to particular Contract Document(s) requiring additional information/interpretation. Identify pertinent drawing and detail number and/or specification section number, title, and paragraph(s).
   6. Annotations: Field dimensions and/or description of conditions which have engendered the request.

7. Contractor's suggested resolution: A written and/or a graphic solution, to scale, is required in cases where clarification of coordination issues is involved, for example; routing, clearances, and/or specific locations of work shown diagrammatically in Contract Documents. If applicable, state the likely impact of the suggested resolution on Contract Time or the Contract Sum.

F. Attachments: Include sketches, coordination drawings, descriptions, photos, submittals, and other information necessary to substantiate the reason for the request.

G. Review Time: Engineer will respond and return RFIs to Contractor within seven calendar days of receipt. For the purpose of establishing the start of the mandated response period, RFIs received after 12:00 noon will be considered as having been received on the following regular working day.
1. Response period may be shortened or lengthened for specific items, subject to mutual agreement, and recorded in a timely manner in progress meeting minutes.

H. Responses: Content of answered RFIs will not constitute in any manner a directive or authorization to perform extra work or delay the project. If in Contractor's belief it is likely to lead to a change to Contract Sum or Contract Time, promptly issue a notice to this effect, and follow up with an appropriate Change Order request to Owner.
1. Response may include a request for additional information, in which case the original RFI will be deemed as having been answered, and an amended one is to be issued forthwith. Identify the amended RFI with an R suffix to the original number.
2. Upon receipt of a response, promptly review and distribute it to all affected parties, and update the RFI Log.
3. Notify Engineer within seven calendar days if an additional or corrected response is required by submitting an amended version of the original RFI, identified as specified above.

3.8 SUBMITTAL SCHEDULE

A. Submit to Engineer for review a schedule for submittals in tabular format.
1. Submit at the same time as the preliminary schedule specified in Section - 01 3216 - Construction Progress Schedule.
2. Format schedule to allow tracking of status of submittals throughout duration of construction.
3. Arrange information to include scheduled date for initial submittal, specification number and title, submittal category (for review or for information), description of item of work covered, and role and name of subcontractor.

3.9 SUBMITTALS FOR REVIEW

A. When the following are specified in individual sections, submit them for review:
1. Product data.
2. Shop drawings.
3. Samples for selection.
4. Samples for verification.

B. Submit to Engineer for review for the limited purpose of checking for compliance with information given and the design concept expressed in Contract Documents.

C. Samples will be reviewed for aesthetic, color, or finish selection.

D. After review, provide copies and distribute in accordance with SUBMITTAL PROCEDURES article below and for record documents purposes described in Section 01 7800 - Closeout Submittals.

3.10 SUBMITTALS FOR INFORMATION

A. When the following are specified in individual sections, submit them for information:
1. Design data.
2. Certificates.
3. Test reports.

4. Inspection reports.
5. Manufacturer's instructions.
6. Manufacturer's field reports.
7. Other types indicated.

B. Submit for Engineer's knowledge as contract administrator or for Owner.

3.11 SUBMITTALS FOR PROJECT CLOSEOUT

A. Submit Correction Punch List for Substantial Completion.
B. Submit Final Correction Punch List for Substantial Completion.
C. When the following are specified in individual sections, submit them at project closeout in compliance with requirements of Section 01 7800 - Closeout Submittals:
   1. Project record documents.
   2. Operation and maintenance data.
   3. Warranties.
   4. Bonds.
   5. Other types as indicated.
D. Submit for Owner's benefit during and after project completion.

3.12 NUMBER OF COPIES OF SUBMITTALS

A. Electronic Documents: Submit one electronic copy in PDF format; an electronically-marked up file will be returned. Create PDFs at native size and right-side up; illegible files will be rejected.
B. Samples: Submit the number specified in individual specification sections; one of which will be retained by Engineer.
   1. After review, produce duplicates.
   2. Retained samples will not be returned to Contractor unless specifically so stated.

3.13 SUBMITTAL PROCEDURES

A. General Requirements:
   1. Use a separate transmittal for each item.
   2. Transmit using one of the approved forms:
      a. Use Form AIA G810.
      b. Use Form CSI/CSC Form 12.1A.
      c. Use Contractor's form, subject to prior approval by Engineer.
   3. Sequentially identify each item. For revised submittals use original number and a sequential numerical suffix.
   4. Identify: Project; Contractor; subcontractor or supplier; pertinent drawing and detail number; and specification section number and article/paragraph, as appropriate on each copy.
   5. Apply Contractor's stamp, signed or initialed certifying that review, approval, verification of products required, field dimensions, adjacent construction work, and coordination of information is in accordance with the requirements of the work and Contract Documents.
   6. Schedule submittals to expedite the Project, and coordinate submission of related items.
   7. Identify variations from Contract Documents and product or system limitations that may be detrimental to successful performance of the completed work.
   8. Distribute reviewed submittals. Instruct parties to promptly report inability to comply with requirements.
B. Product Data Procedures:
   1. Submit only information required by individual specification sections.
   2. Collect required information into a single submittal.
   3. Do not submit (Material) Safety Data Sheets for materials or products.
C. Shop Drawing Procedures:
   1. Prepare accurate, drawn-to-scale, original shop drawing documentation by interpreting Contract Documents and coordinating related work.

2. Generic, non-project-specific information submitted as shop drawings do not meet the requirements for shop drawings.

3.14 SUBMITTAL REVIEW

A. Submittals for Review: Engineer will review each submittal, and approve, or take other appropriate action.
B. Submittals for Information: Engineer will acknowledge receipt and review. See below for actions to be taken.
C. Engineer's actions will be reflected by marking each returned submittal using virtual stamp on electronic submittals.
D. Engineer's and consultants' actions on items submitted for review:
    1. Authorizing purchasing, fabrication, delivery, and installation:
        a. "Approved", or language with same legal meaning.
        b. "Approved as Noted, Resubmission not required", or language with same legal meaning.
            1) At Contractor's option, submit corrected item, with review notations acknowledged and incorporated.
        c. "Approved as Noted, Resubmit for Record", or language with same legal meaning.
    2. Not Authorizing fabrication, delivery, and installation:
E. Engineer's and consultants' actions on items submitted for information:
    1. Items for which no action was taken:
        a. "Received" - to notify the Contractor that the submittal has been received for record only.
    2. Items for which action was taken:
        a. "Reviewed" - no further action is required from Contractor.

END OF SECTION

SECTION 01 4000
QUALITY REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES
A. Submittals.
B. Quality assurance.
C. References and standards.
D. Testing and inspection agencies and services.
E. Contractor's construction-related professional design services.
F. Contractor's design-related professional design services.
G. Control of installation.
H. Tolerances.
I. Manufacturers' field services.
J. Defect Assessment.

1.2 RELATED REQUIREMENTS
A. Iowa Statewide Urban Design and Standards (SUDAS)
B. City of Riverside Municipal Requirements.
C. International Building Code (IBC) Latest Edition.

1.3 REFERENCE STANDARDS
A. ASTM C1077 - Standard Practice for Agencies Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Testing Agency Evaluation; 2024.
B. ASTM D3740 - Standard Practice for Minimum Requirements for Agencies Engaged in Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction; 2023.
C. ASTM E329 - Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection; 2023.
D. ASTM E543 - Standard Specification for Agencies Performing Nondestructive Testing; 2021.
E. ASTM E699 - Standard Specification for Agencies Involved in Testing, Quality Assurance, and Evaluating of Manufactured Building Components; 2016.
F. IAS AC89 - Accreditation Criteria for Testing Laboratories; 2021.

1.4 DEFINITIONS
A. Contractor's Quality Control Plan: Contractor's management plan for executing the Contract for Construction.
B. Contractor's Professional Design Services: Design of some aspect or portion of the project by party other than the design professional of record. Provide these services as part of the Contract for Construction.
    1. Design Services Types Required:
        a. Construction-Related: Services Contractor needs to provide in order to carry out the Contractor’s sole responsibilities for construction means, methods, techniques, sequences, and procedures.
C. Design Data: Design-related, signed and sealed drawings, calculations, specifications, certifications, shop drawings and other submittals provided by Contractor, and prepared directly by, or under direct supervision of, appropriately licensed design professional.

1.5 CONTRACTOR'S CONSTRUCTION-RELATED PROFESSIONAL DESIGN SERVICES
A. Coordination: Contractor's professional design services are subject to requirements of project's Conditions for Construction Contract.
B. Provide such engineering design services as may be necessary to plan and safely conduct certain construction operations, pertaining to, but not limited to the following:
    1. Temporary scaffolding.

2. Temporary bracing.
3. Temporary falsework for support of spanning or arched structures.
4. Temporary foundation underpinning.
5. Temporary stairs or steps required for construction access only.
6. Temporary hoist(s) and rigging.

1.6 CONTRACTOR'S DESIGN-RELATED PROFESSIONAL DESIGN SERVICES

A. Coordination: Contractor's professional design services are subject to requirements of project's Conditions for Construction Contract.
B. Base design on performance and/or design criteria indicated in individual specification sections.
   1. Submit a Request for Interpretation to Engineer if the criteria indicated are not sufficient to perform required design services.
C. Scope of Contractor's Professional Design Services: Provide for the following items of work:
   1. Concrete Mix Design: As described in Section 03 3000 - Cast-in-Place Concrete. No specific designer qualifications are required.

1.7 SUBMITTALS

A. See Section 01 3000 Administrative Requirements for submittal procedures.
B. Designer's Qualification Statement: Submit for Engineer's knowledge as contract administrator, or for Owner's information.
   1. Include information for each individual professional responsible for producing, or supervising production of, design-related professional services provided by Contractor.
      a. Full name.
      b. Professional licensure information.
      c. Statement addressing extent and depth of experience specifically relevant to design of items assigned to Contractor.
C. Design Data: Submit for Engineer's knowledge as contract administrator for the limited purpose of assessing compliance with information given and the design concept expressed in the Contract Documents, or for Owner's information.
   1. Include calculations that have been used to demonstrate compliance to performance and regulatory criteria provided, and to determine design solutions.
   2. Include required product data and shop drawings.
   3. Include a statement or certification attesting that design data complies with criteria indicated, such as building codes, loads, functional, and similar engineering requirements.
   4. Include signature and seal of design professional responsible for allocated design services on calculations and drawings.
D. Test Reports: After each test/inspection, promptly submit two copies of report to Engineer and to Owner.
   1. Include:
      a. Date issued.
      b. Project title and number.
      c. Name of inspector.
      d. Date and time of sampling or inspection.
      e. Identification of product and specifications section.
      f. Location in the Project.
      g. Type of test/inspection.
      h. Date of test/inspection.
      i. Results of test/inspection.
      j. Compliance with Contract Documents.
      k. When requested by Engineer, provide interpretation of results.
   2. Test report submittals are for Engineer's knowledge as contract administrator for the limited purpose of assessing compliance with information given and the design concept expressed in the Contract Documents, or for Owner's information.

E. Certificates: When specified in individual specification sections, submit certification by the manufacturer and Contractor or installation/application subcontractor to Engineer, in quantities specified for Product Data.
   1. Indicate material or product complies with or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
   2. Certificates may be recent or previous test results on material or product, but must be acceptable to Engineer.

F. Manufacturer's Instructions: When specified in individual specification sections, submit printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, for the Owner's information. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.

G. Manufacturer's Field Reports: Submit reports for Engineer's benefit as contract administrator or for Owner.
   1. Submit for information for the limited purpose of assessing compliance with information given and the design concept expressed in the Contract Documents.

H. Erection Drawings: Submit drawings for Engineer's benefit as contract administrator or for Owner.
   1. Submit for information for the limited purpose of assessing compliance with information given and the design concept expressed in the Contract Documents.
   2. Data indicating inappropriate or unacceptable Work may be subject to action by Engineer or Owner.

1.8 QUALITY ASSURANCE

A. Testing Agency Qualifications:
   1. Prior to start of work, submit agency name, address, and telephone number, and names of full time registered Engineer and responsible officer.
   2. Submit copy of report of laboratory facilities inspection made by NIST Construction Materials Reference Laboratory during most recent inspection, with memorandum of remedies of any deficiencies reported by the inspection.
   3. Qualification Statement: Provide documentation showing testing laboratory is accredited under IAS AC89.

B. Designer Qualifications: Where professional engineering design services and design data submittals are specifically required of Contractor by Contract Documents, provide services of a Professional Engineer experienced in design of this type of work and licensed in the State of Illinois.

C. Responsibility: responsibility for contracting and coordinating the testing requirements for the project will be that of the Contractor. Owner reserves the right to hire and provide supplemental testing as they see fit, but the Contractor shall hold the inpsection and testing contracts for this project.

1.9 REFERENCES AND STANDARDS

A. For products and workmanship specified by reference to a document or documents not included in the Project Manual, also referred to as reference standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.

B. Comply with reference standard of date of issue current on date of Contract Documents, except where a specific date is established by applicable code.

C. Obtain copies of standards where required by product specification sections.

D. Maintain copy at project site during submittals, planning, and progress of the specific work, until Substantial Completion.

E. Should specified reference standards conflict with Contract Documents, request clarification from Engineer before proceeding.

F. Neither the contractual relationships, duties, or responsibilities of the parties in Contract nor those of Engineer shall be altered from Contract Documents by mention or inference otherwise

in any reference document.

1.10 TESTING AND INSPECTION AGENCIES AND SERVICES

A. Owner shall employ and pay for services of an independent testing agency to perform specified testing and inspection.
B. Employment of agency in no way relieves Contractor of obligation to perform Work in accordance with requirements of Contract Documents.
C. Contractor Employed Agency:
   1. Testing agency: Comply with requirements of ASTM E329, ASTM E543, ASTM E699, ASTM C1021, ASTM C1077, ASTM C1093, and ASTM D3740.
   2. Inspection agency: Comply with requirements of ASTM D3740 and ASTM E329.
   3. Laboratory Qualifications: Accredited by IAS according to IAS AC89.
   4. Laboratory: Authorized to operate in Illinois.
   5. Laboratory Staff: Maintain a full time registered Engineer on staff to review services.
   6. Testing Equipment: Calibrated at reasonable intervals either by NIST or using an NIST established Measurement Assurance Program, under a laboratory measurement quality assurance program.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.1 CONTROL OF INSTALLATION

A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce work of specified quality.
B. Comply with manufacturers' instructions, including each step in sequence.
C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Engineer before proceeding.
D. Comply with specified standards as minimum quality for the work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
E. Have work performed by persons qualified to produce required and specified quality.
F. Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.
G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, and disfigurement.

3.2 TOLERANCES

A. Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate.
B. Comply with manufacturers' tolerances. Should manufacturers' tolerances conflict with Contract Documents, request clarification from Engineer before proceeding.
C. Adjust products to appropriate dimensions; position before securing products in place.

3.3 TESTING AND INSPECTION

A. See individual specification sections and notes for testing and inspection required.
B. Comply with all requirements by the Authority Having Jurisdiction (AHJ) and ensure all tests are being scheduled, coordinated, and supplied.
C. Testing Agency Duties:
   1. Provide qualified personnel at site. Cooperate with Engineer and Contractor in performance of services.
   2. Perform specified sampling and testing of products in accordance with specified standards.

3. Ascertain compliance of materials and mixes with requirements of Contract Documents.
4. Promptly notify Engineer and Contractor of observed irregularities or non-compliance of Work or products.
5. Perform additional tests and inspections required by Engineer.
6. Submit reports of all tests/inspections specified.

D. Limits on Testing/Inspection Agency Authority:
1. Agency may not release, revoke, alter, or enlarge on requirements of Contract Documents.
2. Agency may not approve or accept any portion of the Work.
3. Agency may not assume any duties of Contractor.
4. Agency has no authority to stop the Work.

E. Contractor Responsibilities:
1. Deliver to agency at designated location, adequate samples of materials proposed to be used that require testing, along with proposed mix designs.
2. Cooperate with laboratory personnel, and provide access to the Work and to manufacturers' facilities.
3. Provide incidental labor and facilities:
   a. To provide access to Work to be tested/inspected.
   b. To obtain and handle samples at the site or at source of Products to be tested/inspected.
   c. To facilitate tests/inspections.
   d. To provide storage and curing of test samples.
4. Notify Engineer and laboratory 48 hours minimum prior to expected time for operations requiring testing/inspection services.
5. Employ services of an independent qualified testing laboratory and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.
6. Arrange with Owner's agency and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.

F. Re-testing required because of non-compliance with specified requirements shall be performed by the same agency on instructions by Engineer.

G. Re-testing required because of non-compliance with specified requirements shall be paid for by Contractor.

3.4 MANUFACTURERS' FIELD SERVICES

A. When specified in individual specification sections, require material or product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment as applicable, and to initiate instructions when necessary.

B. Submit qualifications of observer to Engineer 30 days in advance of required observations.

C. Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.

3.5 DEFECT ASSESSMENT

A. Replace Work or portions of the Work not complying with specified requirements.

B. If, in the opinion of Engineer, it is not practical to remove and replace the work, Engineer will direct an appropriate remedy or adjust payment.

END OF SECTION

SECTION 01 5000
TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.1 SECTION INCLUDES
A. Dewatering
B. Temporary utilities.
C. Temporary telecommunications services.
D. Temporary sanitary facilities.
E. Temporary Controls: Barriers, enclosures, and fencing.
F. Security requirements.
G. Vehicular access and parking.
H. Waste removal facilities and services.
I. Project identification sign.
J. Field offices.

1.2 RELATED REQUIREMENTS
A. Section 01 5100 - Temporary Utilities.

1.3 DEWATERING
A. If necessary, provide temporary means and methods for dewatering all temporary facilities and controls.
B. Maintain temporary facilities in operable condition.
C. Maintain temporary facilities as directed by Engineer.

1.4 TEMPORARY UTILITIES - SEE SECTION 01 5100
A. Contractor will provide the following:
   1. Electrical power and metering, consisting of connection to existing facilities.
   2. Water supply, consisting of connection to existing facilities.
B. Provide and pay for all electrical power, lighting, water, heating and cooling, and ventilation required for construction purposes.

1.5 TEMPORARY SANITARY FACILITIES
A. Provide and maintain required facilities and enclosures. Provide at time of project mobilization.
   1. Sanitary portable restroom - minimum 1.
B. Maintain daily in clean and sanitary condition.

1.6 BARRIERS
A. Provide barriers to prevent unauthorized entry to construction areas, to prevent access to areas that could be hazardous to workers or the public, to allow for owner's use of site and to protect existing facilities and adjacent properties from damage from construction operations and demolition.
B. Provide barricades and covered walkways required by governing authorities for public rights-of-way.
C. Protect non-owned vehicular traffic, stored materials, site, and structures from damage.

1.7 FENCING
A. Construction: Contractor's option.

1.8 VEHICULAR ACCESS AND PARKING
A. Coordinate access and haul routes with governing authorities and Owner.
B. Provide and maintain access to fire hydrants, free of obstructions.
C. Provide means of removing mud from vehicle wheels before entering streets.
   1. Comply with National NPDES General Permit #2 for Stormwater and Erosion Control.

2. Comply with local AHJ requirements for Stormwater and Erosion Control.

D. Provide temporary parking areas to accommodate construction personnel. When site space is not adequate, provide additional off-site parking.
   1. Coordinate parking for each constructrion location with the Owner.

1.9 WASTE REMOVAL

A. Provide waste removal facilities and services as required to maintain the site in clean and orderly condition.
B. Provide containers with lids. Remove trash from site periodically.
C. If materials to be recycled or re-used on the project must be stored on-site, provide suitable non-combustible containers; locate containers holding flammable material outside the structure unless otherwise approved by the authorities having jurisdiction.
D. Open free-fall chutes are not permitted. Terminate closed chutes into appropriate containers with lids.

1.10 PROJECT IDENTIFICATION

A. If desired, provide project identification sign of design and construction indicated on drawings.
B. Erect on site at location established by Engineer.
C. No other signs are allowed without Owner permission except those required by law.

1.11 FIELD OFFICES

A. Allowed but not required.
B. Locate offices a minimum distance of 30 feet from existing and new structures.
C. Coordination location of office with the Owner.

1.12 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

A. Remove temporary utilities, equipment, facilities, materials, prior to Date of Substantial Completion inspection.
B. Remove underground installations to a minimum depth of 2 feet. Grade site as indicated.
C. Clean and repair damage caused by installation or use of temporary work.
D. Restore existing facilities used during construction to original condition.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 5100
TEMPORARY UTILITIES

PART 1 GENERAL

1.1 SECTION INCLUDES
A. Temporary Utilities: Provision of electricity, lighting, heat, ventilation, and water.

1.2 RELATED REQUIREMENTS
A. Section 01 5000 - Temporary Facilities and Controls:
   1. Temporary telecommunications services for administrative purposes.
   2. Temporary sanitary facilities required by law.

1.3 REFERENCE STANDARDS
A. 29 CFR 1926 - Safety and Health Regulations for Construction; Current Edition.

1.4 TEMPORARY ELECTRICITY
A. Cost: By Contractor.
B. Provide power service required from utility source.
C. Provide main service disconnect and over-current protection at convenient location and meter.
D. Permanent convenience receptacles may be utilized during construction.

1.5 TEMPORARY HEATING
A. Cost of Energy: By Contractor.
B. Provide heating devices and heat as needed to maintain specified conditions for construction operations.

1.6 TEMPORARY WATER SERVICE
A. Cost of Water Used: By Contractor.
B. Connect to existing water source.
   1. Coordinate with AHJ to provide temporary hookup and backflow preventer.
      a. Costs by Contractor.
   2. Exercise measures to conserve water.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 6000
PRODUCT REQUIREMENTS

PART 1 GENERAL

1.1 RELATED REQUIREMENTS

A. Section 01 2500 - Substitution Procedures: Substitutions made during procurement and/or construction phases.

B. Section 01 7419 - Construction Waste Management and Disposal: Waste disposal requirements potentially affecting product selection, packaging and substitutions.

1.2 SUBMITTALS

A. Product Data Submittals: Submit manufacturer's standard published data. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.

B. Shop Drawing Submittals: Prepared specifically for this Project; indicate utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.

C. Sample Submittals: Illustrate functional and aesthetic characteristics of the product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.

1. For selection from standard finishes, submit samples of the full range of the manufacturer's standard colors, textures, and patterns.

PART 2 PRODUCTS

2.1 NEW PRODUCTS

A. Provide new products unless specifically required or permitted by Contract Documents.

B. Use of products having any of the following characteristics is not permitted:

C. Where other criteria are met, Contractor shall give preference to products that:

1. If used on interior, have lower emissions, as defined in Section 01 6116.
2. If wet-applied, have lower VOC content, as defined in Section 01 6116.

2.2 PRODUCT OPTIONS

A. Products Specified by Reference Standards or by Description Only: Use any product meeting those standards or description.

B. Products Specified by Naming One or More Manufacturers: Use a product of one of the manufacturers named and meeting specifications, no options or substitutions allowed.

C. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named.

PART 3 EXECUTION

3.1 SUBSTITUTION LIMITATIONS

A. See Section 01 2500 - Substitution Procedures.

3.2 TRANSPORTATION AND HANDLING

A. Package products for shipment in manner to prevent damage; for equipment, package to avoid loss of factory calibration.

B. If special precautions are required, attach instructions prominently and legibly on outside of packaging.

C. Coordinate schedule of product delivery to designated prepared areas in order to minimize site storage time and potential damage to stored materials.

D. Transport and handle products in accordance with manufacturer's instructions.

E. Transport materials in covered trucks to prevent contamination of product and littering of surrounding areas.
F. Promptly inspect shipments to ensure that products comply with requirements, quantities are correct, and products are undamaged.
G. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage, and to minimize handling.
H. Arrange for the return of packing materials, such as wood pallets, where economically feasible.

3.3 STORAGE AND PROTECTION

A. Designate receiving/storage areas for incoming products so that they are delivered according to installation schedule and placed convenient to work area in order to minimize waste due to excessive materials handling and misapplication. See Section 01 7419.
B. Store and protect products in accordance with manufacturers' instructions.
C. Store with seals and labels intact and legible.
D. Store sensitive products in weathertight, climate-controlled enclosures in an environment favorable to product.
E. For exterior storage of fabricated products, place on sloped supports above ground.
F. Protect products from damage or deterioration due to construction operations, weather, precipitation, humidity, temperature, sunlight and ultraviolet light, dirt, dust, and other contaminants.
G. Comply with manufacturer's warranty conditions, if any.
H. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.
I. Prevent contact with material that may cause corrosion, discoloration, or staining.
J. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.
K. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

END OF SECTION

SECTION 01 6116
VOLATILE ORGANIC COMPOUND (VOC) CONTENT RESTRICTIONS

PART 1 GENERAL

1.1 SECTION INCLUDES
A. Requirements for Indoor-Emissions-Restricted products.
B. Requirements for VOC-Content-Restricted products.

1.2 RELATED REQUIREMENTS
A. Section 01 3000 - Administrative Requirements: Submittal procedures.
B. Section 01 4000 - Quality Requirements: Procedures for testing and certifications.
C. Section 01 6000 - Product Requirements: Fundamental product requirements, substitutions and product options, delivery, storage, and handling.

1.3 DEFINITIONS
A. Indoor-Emissions-Restricted Products: All products in the following product categories, whether specified or not:
   1. Interior paints and coatings applied on site.
   2. Interior adhesives and sealants applied on site, including flooring adhesives.
   3. Flooring.
   4. Composite wood.
   5. Products making up wall and ceiling assemblies.
   6. Thermal and acoustical insulation.
B. VOC-Content-Restricted Products: All products in the following product categories, whether specified or not:
   1. Interior paints and coatings applied on site.
   2. Interior adhesives and sealants applied on site, including flooring adhesives.
   3. Wet-applied roofing and waterproofing.
C. Interior of Building: Anywhere inside the exterior weather barrier.
D. Adhesives: All gunnable, trowelable, liquid-applied, and aerosol adhesives, whether specified or not; including flooring adhesives, resilient base adhesives, and pipe jointing adhesives.
E. Sealants: All gunnable, trowelable, and liquid-applied joint sealants and sealant primers, whether specified or not; including firestopping sealants and duct joint sealers.
F. Inherently Non-Emitting Materials: Products composed wholly of minerals or metals, unless they include organic-based surface coatings, binders, or sealants; and specifically the following:
   1. Concrete.
   2. Clay brick.
   3. Metals that are plated, anodized, or powder-coated.
   4. Glass.
   5. Ceramics.
   6. Solid wood flooring that is unfinished and untreated.

1.4 REFERENCE STANDARDS
A. 40 CFR 59, Subpart D - National Volatile Organic Compound Emission Standards for Architectural Coatings; U.S. Environmental Protection Agency; current edition.
B. ASTM D3960 - Standard Practice for Determining Volatile Organic Compound (VOC) Content of Paints and Related Coatings; 2005 (Reapproved 2018).
C. CARB (SCM) - Suggested Control Measure for Architectural Coatings; California Air Resources Board; 2020.
D. SCAQMD 1113 - Architectural Coatings; 1977, with Amendment (2016).
E. SCAQMD 1168 - Adhesive and Sealant Applications; 1989, with Amendment (2017).

1.5 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
B. Product Data: For each VOC-restricted product used in the project, submit evidence of compliance.

1.6 QUALITY ASSURANCE

A. VOC Content Test Method: 40 CFR 59, Subpart D (EPA Method 24), or ASTM D3960, unless otherwise indicated.
    1. Evidence of Compliance: Acceptable types of evidence are:
        a. Report of laboratory testing performed in accordance with requirements.
B. Testing Agency Qualifications: Independent firm specializing in performing testing and inspections of the type specified in this section.

PART 2 PRODUCTS

2.1 MATERIALS

A. VOC-Content-Restricted Products: VOC content not greater than required by the following:
    1. Adhesives, Including Flooring Adhesives: SCAQMD 1168 Rule.
    2. Joint Sealants: SCAQMD 1168 Rule.
    3. Paints and Coatings: Each color; most stringent of the following:
        a. 40 CFR 59, Subpart D.
        b. SCAQMD 1113 Rule.
        c. CARB (SCM).
    4. Wet-Applied Roofing and Waterproofing: Comply with requirements for paints and coatings.

PART 3 EXECUTION

3.1 FIELD QUALITY CONTROL

A. Owner reserves the right to reject non-compliant products, whether installed or not, and require their removal and replacement with compliant products at no extra cost to Owner.
B. Additional costs to restore indoor air quality due to installation of non-compliant products will be borne by Contractor.

END OF SECTION

SECTION 01 7000
EXECUTION AND CLOSEOUT REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Examination, preparation, and general installation procedures.
B. Pre-installation meetings.
C. Surveying for laying out the work.
D. Cleaning and protection.
E. Starting of systems and equipment.
F. Demonstration and instruction of Owner personnel.
G. Closeout procedures, including Contractor's Correction Punch List, except payment procedures.
H. General requirements for maintenance service.

1.2 RELATED REQUIREMENTS

A. Section 01 4000 - Quality Requirements: Testing and inspection procedures.
B. Section 01 7800 - Closeout Submittals: Project record documents, operation and maintenance data, warranties, and bonds.

1.3 REFERENCE STANDARDS

A. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations; 2022, with Errata (2021).

1.4 SUBMITTALS

A. See Section 01 3000 - Administration Requirements, for submittal procedures.
B. Survey work: Submit name, address, and telephone number of Surveyor before starting survey work.
   1. Contractor is responsible for any layout and construction staking required.
   2. Benchmark data and elevation can be provided on site by Owner on request from contractor.
C. Cutting and Patching: Submit written request in advance of cutting or alteration that affects:
   1. Structural integrity of any element of Project.
   2. Integrity of weather exposed or moisture resistant element.
   3. Efficiency, maintenance, or safety of any operational element.
   4. Visual qualities of sight exposed elements.
   5. Work of Owner or separate Contractor.
D. Project Record Documents: Accurately record actual locations of capped and active utilities.

1.5 QUALIFICATIONS

A. For surveying work, employ a land surveyor registered in the State in which the Project is located and acceptable to Engineer. Submit evidence of surveyor's Errors and Omissions insurance coverage in the form of an Insurance Certificate. Employ only individual(s) trained and experienced in collecting and recording accurate data relevant to ongoing construction activities,
B. Contractor shall employ only competent workers for execution of all work and such work shall be performed under direct supervision of experienced and qualified superintendent.

1.6 AVAILABILITY

A. Contractor shall make any and all arrangements to provide a 24-7 emergency contact for the project who is authorized to make decisions.
B. Contractor shall make any and all arrangements that supervisiing members of work crews can be reached by phone any time during the working day.

1.7 WORK BOUNDARIES

A. Work boundaries will be defined on the project plans.
B. Contractor may request construction limit delineation from the Owner.
C. Operations shall be confied to the work area allocated and designated.
    1. Operations which are not confined to these limits will be the complete responsibility of the Contractor from and restoration, repair, and liability standpoint.
    2. Written permission should be requested for known work that will be required outside of work boundaries.

1.8 SITE PROTECTION

A. Except as noted contractor shall protect all structures, utilities, landscaping and other elements during work progress.
B. All debris and unused materials shall be removed from site as soon as practicable.
    1. Site shall be maintained in a clean and presentable condition.
C. Site shall be restored (as nearly as possible) to the original condition including any items that have been damaged or destroyed through contractor negligence.

1.9 PROJECT CONDITIONS

A. Grade site to drain. Maintain excavations free of water. Provide, operate, and maintain pumping equipment.
B. Protect site from puddling or running water. Provide water barriers as required to protect site from soil erosion.
C. Perform dewatering activities, as required, for the duration of the project.
D. Dust Control: Execute work by methods to minimize raising dust from construction operations. Provide positive means to prevent air-borne dust from dispersing into atmosphere and over adjacent property.
E. Erosion and Sediment Control: Plan and execute work by methods to control surface drainage from cuts and fills, from borrow and waste disposal areas. Prevent erosion and sedimentation.
    1. Minimize amount of bare soil exposed at one time.
    2. Provide temporary measures such as berms, dikes, and drains, to prevent water flow.
    3. Periodically inspect earthwork to detect evidence of erosion and sedimentation; promptly apply corrective measures.
F. Noise Control: Provide methods, means, and facilities to minimize noise produced by construction operations.
    1. Outdoors: Limit conduct of especially noisy exterior work to the hours of 8 am to 5 pm.
G. Pollution Control: Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances, and pollutants produced by construction operations. Comply with federal, state, and local regulations.

1.10 COORDINATION

A. Coordinate scheduling, submittals, and work of the various sections of the Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.
B. Notify affected utility companies and comply with their requirements.
C. Verify that utility requirements and characteristics of new operating equipment are compatible with building utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.
D. Coordinate space requirements, supports, and installation of mechanical and electrical work that are indicated diagrammatically on drawings. Follow routing indicated for pipes, ducts, and conduit, as closely as practicable; place runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
E. In finished areas except as otherwise indicated, conceal pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.

F. Coordinate completion and clean-up of work of separate sections.
G. After Owner occupancy of premises, coordinate access to site for correction of defective work and work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

PART 2 PRODUCTS

2.1 PATCHING MATERIALS

A. New Materials: As specified in product sections; match existing products and work for patching and extending work.
B. Type and Quality of Existing Products: Determine by inspecting and testing products where necessary, referring to existing work as a standard.
C. Product Substitution: For any proposed change in materials, submit request for substitution on AIA standard form.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent work. Start of work means acceptance of existing conditions.
B. Verify that existing substrate is capable of structural support or attachment of new work being applied or attached.
C. Examine and verify specific conditions described in individual specification sections.
D. Take field measurements before confirming product orders or beginning fabrication, to minimize waste due to over-ordering or misfabrication.
E. Verify that utility services are available, of the correct characteristics, and in the correct locations.
F. Prior to Cutting: Examine existing conditions prior to commencing work, including elements subject to damage or movement during cutting and patching. After uncovering existing work, assess conditions affecting performance of work. Beginning of cutting or patching means acceptance of existing conditions.

3.2 PREPARATION

A. Clean substrate surfaces prior to applying next material or substance.
B. Seal cracks or openings of substrate prior to applying next material or substance.
C. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.

3.3 PREINSTALLATION MEETINGS

A. When required in individual specification sections, convene a preinstallation meeting at the site prior to commencing work of the section.
B. Require attendance of parties directly affecting, or affected by, work of the specific section.
C. Notify Engineer 3 days in advance of meeting date.
D. Prepare agenda and preside at meeting:
    1. Review conditions of examination, preparation and installation procedures.
    2. Review coordination with related work.
E. Record minutes and distribute copies within two days after meeting to participants, with two copies to Engineer, Owner, participants, and those affected by decisions made.

3.4 LAYING OUT THE WORK

A. Verify locations of survey control points prior to starting work.
B. Promptly notify Engineer of any discrepancies discovered.
C. Protect survey control points prior to starting site work; preserve permanent reference points during construction.

D. Promptly report to Engineer the loss or destruction of any reference point or relocation required because of changes in grades or other reasons.
E. Replace dislocated survey control points based on original survey control. Make no changes without prior written notice to Engineer.
F. Utilize recognized engineering survey practices.
G. Establish elevations, lines and levels. Locate and lay out by instrumentation and similar appropriate means:
   1. Site improvements including pavements; stakes for grading, fill and topsoil placement; utility locations, slopes, and invert elevations; and equipment.
   2. Grid or axis for structures.
   3. Building foundation, column locations, ground floor elevations.
H. Periodically verify layouts by same means.
I. Maintain a complete and accurate log of control and survey work as it progresses.

3.5 GENERAL INSTALLATION REQUIREMENTS

A. Install products as specified in individual sections, in accordance with manufacturer's instructions and recommendations, and so as to avoid waste due to necessity for replacement.
B. Make vertical elements plumb and horizontal elements level, unless otherwise indicated.
C. Install equipment and fittings plumb and level, neatly aligned with adjacent vertical and horizontal lines, unless otherwise indicated.
D. Make consistent texture on surfaces, with seamless transitions, unless otherwise indicated.
E. Make neat transitions between different surfaces, maintaining texture and appearance.

3.6 CUTTING AND PATCHING

A. Whenever possible, execute the work by methods that avoid cutting or patching.
B. Perform whatever cutting and patching is necessary to:
   1. Complete the work.
   2. Fit products together to integrate with other work.
   3. Provide openings for penetration of mechanical, electrical, and other services.
   4. Match work that has been cut to adjacent work.
   5. Repair areas adjacent to cuts to required condition.
   6. Repair new work damaged by subsequent work.
   7. Remove samples of installed work for testing when requested.
   8. Remove and replace defective and non-complying work.
C. Execute work by methods that avoid damage to other work and that will provide appropriate surfaces to receive patching and finishing. In existing work, minimize damage and restore to original condition.
D. Employ original installer to perform cutting for weather exposed and moisture resistant elements, and sight exposed surfaces.
E. Cut rigid materials using masonry saw or core drill. Pneumatic tools not allowed without prior approval.
F. Restore work with new products in accordance with requirements of Contract Documents.
G. Fit work air tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
H. At penetrations of fire rated walls, partitions, ceiling, or floor construction, completely seal voids with fire rated material in accordance with Section 07 8400, to full thickness of the penetrated element.
I. Patching:
   1. Finish patched surfaces to match finish that existed prior to patching. On continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.
   2. Match color, texture, and appearance.
   3. Repair patched surfaces that are damaged, lifted, discolored, or showing other imperfections due to patching work. If defects are due to condition of substrate, repair

substrate prior to repairing finish.

3.7 PROGRESS CLEANING

A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.
B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing the space.
C. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust.
D. Collect and remove waste materials, debris, and trash/rubbish from site periodically and dispose off-site; do not burn or bury.

3.8 PROTECTION OF INSTALLED WORK

A. Protect installed work from damage by construction operations.
B. Provide special protection where specified in individual specification sections.
C. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.
D. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.
E. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.
F. Prohibit traffic or storage upon waterproofed or roofed surfaces. If traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.
G. Remove protective coverings when no longer needed; reuse or recycle coverings if possible.

3.9 SYSTEM STARTUP

A. Coordinate schedule for start-up of various equipment and systems.
B. Verify that each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequence, and for conditions that may cause damage.
C. Verify tests, meter readings, and specified electrical characteristics agree with those required by the equipment or system manufacturer.
D. Verify that wiring and support components for equipment are complete and tested.
E. Execute start-up under supervision of applicable Contractor personnel and manufacturer's representative in accordance with manufacturers' instructions.
F. Submit a written report that equipment or system has been properly installed and is functioning correctly.

3.10 DEMONSTRATION AND INSTRUCTION

A. Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, maintenance, and shutdown of each item of equipment at scheduled time, at equipment location.
B. For equipment or systems requiring seasonal operation, perform demonstration for other season within six months.
C. Provide a qualified person who is knowledgeable about the Project to perform demonstration and instruction of Owner's personnel.

3.11 ADJUSTING

A. Adjust operating products and equipment to ensure smooth and unhindered operation.

3.12 FINAL CLEANING

A. Use cleaning materials that are nonhazardous.
B. Remove all labels that are not permanent. Do not paint or otherwise cover fire test labels or nameplates on mechanical and electrical equipment.
C. Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.
D. Clean filters of operating equipment.

E. Clean site; sweep paved areas, rake clean landscaped surfaces.
F. Remove waste, surplus materials, trash/rubbish, and construction facilities from the site; dispose of in legal manner; do not burn or bury.

3.13 CLOSEOUT PROCEDURES

A. Make submittals that are required by governing or other authorities.
B. Accompany Project Coordinator on preliminary inspection to determine items to be listed for completion or correction in the Contractor's Correction Punch List for Contractor's Notice of Substantial Completion.
C. Notify Engineer when work is considered ready for Engineer's Substantial Completion inspection.
D. Submit written certification containing Contractor's Correction Punch List, that Contract Documents have been reviewed, work has been inspected, and that work is complete in accordance with Contract Documents and ready for Engineer's Substantial Completion inspection.
E. Conduct Substantial Completion inspection and create Final Correction Punch List containing Engineer's and Contractor's comprehensive list of items identified to be completed or corrected and submit to Engineer.
F. Correct items of work listed in Final Correction Punch List and comply with requirements for access to Owner-occupied areas.
G. Notify Engineer when work is considered finally complete and ready for Engineer's Substantial Completion final inspection.
H. Complete items of work determined by Engineer listed in executed Certificate of Substantial Completion.

3.14 MAINTENANCE

A. Provide service and maintenance of components indicated in specification sections.
B. Maintenance Period: As indicated in specification sections or, if not indicated, not less than one year from the Date of Substantial Completion or the length of the specified warranty, whichever is longer.
C. Examine system components at a frequency consistent with reliable operation. Clean, adjust, and lubricate as required.
D. Include systematic examination, adjustment, and lubrication of components. Repair or replace parts whenever required. Use parts produced by the manufacturer of the original component.
E. Maintenance service shall not be assigned or transferred to any agent or subcontractor without prior written consent of the Owner.

END OF SECTION

SECTION 01 7419
CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 GENERAL

1.1 WASTE MANAGEMENT REQUIREMENTS

A. Owner requires that this project generate the least amount of trash and waste possible.
B. Employ processes that ensure the generation of as little waste as possible due to error, poor planning, breakage, mishandling, contamination, or other factors.
C. Minimize trash/waste disposal in landfills; reuse, salvage, or recycle as much waste as economically feasible.
D. Methods of trash/waste disposal that are not acceptable are:
    1. Burning on the project site.
    2. Burying on the project site.
    3. Dumping or burying on other property, public or private.
    4. Other illegal dumping or burying.
E. Regulatory Requirements: Contractor is responsible for knowing and complying with regulatory requirements, including but not limited to Federal, state and local requirements, pertaining to legal disposal of all construction and demolition waste materials.
    1. This includes, but is not limited to, compliance with National Emission Standards for Hazardous Air Pollutants (NESHAP) requirements as it pertains to transite piping or other materials containing asbestos detected on the property during construction. Compliance with regulations in 40 CFR 61 Subpart M must be documented.

1.2 DEFINITIONS

A. Clean: Untreated and unpainted; not contaminated with oils, solvents, caulk, or the like.
B. Construction and Demolition Waste: Solid wastes typically including building materials, packaging, trash, debris, and rubble resulting from construction, remodeling, repair and demolition operations.
C. Hazardous: Exhibiting the characteristics of hazardous substances, i.e., ignitibility, corrosivity, toxicity or reactivity.
D. Nonhazardous: Exhibiting none of the characteristics of hazardous substances, i.e., ignitibility, corrosivity, toxicity, or reactivity.
E. Nontoxic: Neither immediately poisonous to humans nor poisonous after a long period of exposure.
F. Recyclable: The ability of a product or material to be recovered at the end of its life cycle and remanufactured into a new product for reuse by others.
G. Recycle: To remove a waste material from the project site to another site for remanufacture into a new product for reuse by others.
H. Recycling: The process of sorting, cleansing, treating and reconstituting solid waste and other discarded materials for the purpose of using the altered form. Recycling does not include burning, incinerating, or thermally destroying waste.
I. Return: To give back reusable items or unused products to vendors for credit.
J. Reuse: To reuse a construction waste material in some manner on the project site.
K. Salvage: To remove a waste material from the project site to another site for resale or reuse by others.
L. Sediment: Soil and other debris that has been eroded and transported by storm or well production run-off water.
M. Source Separation: The act of keeping different types of waste materials separate beginning from the first time they become waste.
N. Toxic: Poisonous to humans either immediately or after a long period of exposure.
O. Trash: Any product or material unable to be reused, returned, recycled, or salvaged.

P. Waste: Extra material or material that has reached the end of its useful life in its intended use. Waste includes salvageable, returnable, recyclable, and reusable material.

1.3 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

PART 2 PRODUCTS - NOT USE

PART 3 EXECUTION

3.1 WASTE MANAGEMENT PROCEDURES

A. See Section 01 3000 for additional requirements for project meetings, reports, submittal procedures, and project documentation.
B. See Section 01 5000 for additional requirements related to trash/waste collection and removal facilities and services.
C. See Section 01 6000 for waste prevention requirements related to delivery, storage, and handling.
D. See Section 01 7000 for trash/waste prevention procedures related to demolition, cutting and patching, installation, protection, and cleaning.

3.2 WASTE MANAGEMENT PLAN IMPLEMENTATION

A. Manager: Designate an on-site person or persons responsible for instructing workers and overseeing and documenting results of the Waste Management Plan.
B. Instruction: Provide on-site instruction of appropriate separation, handling, and recycling, salvage, reuse, and return methods to be used by all parties at the appropriate stages of the project.
C. Meetings: Discuss trash/waste management goals and issues at project meetings.
    1. Prebid meeting.
    2. Preconstruction meeting.
    3. Regular job-site meetings.
D. Facilities: Provide specific facilities for separation and storage of materials for recycling, salvage, reuse, return, and trash disposal, for use by all contractors and installers.
    1. Provide containers as required.
    2. Provide adequate space for pick-up and delivery and convenience to subcontractors.
    3. Keep recycling and trash/waste bin areas neat and clean and clearly marked in order to avoid contamination of materials.
E. Hazardous Wastes: Separate, store, and dispose of hazardous wastes according to applicable regulations.
F. Recycling: Separate, store, protect, and handle at the site identified recyclable waste products in order to prevent contamination of materials and to maximize recyclability of identified materials. Arrange for timely pickups from the site or deliveries to recycling facility in order to prevent contamination of recyclable materials.
G. Reuse of Materials On-Site: Set aside, sort, and protect separated products in preparation for reuse.
H. Salvage: Set aside, sort, and protect products to be salvaged for reuse off-site.

END OF SECTION

SECTION 01 7800
CLOSEOUT SUBMITTALS

PART 1 GENERAL

1.1 SECTION INCLUDES
A. Project Record Documents.
B. Operation and Maintenance Data.
C. Warranties and bonds.

1.2 RELATED REQUIREMENTS
A. Section 01 3000: Submittals procedures, shop drawings, product data, and samples.
B. Individual Product Sections: Specific requirements for operation and maintenance data.
C. Individual Product Sections: Warranties required for specific products or Work.

1.3 SUBMITTALS
A. Project Record Documents: Submit documents to Engineer with claim for final Application for Payment.
B. Operation and Maintenance Data:
   1. For equipment, or component parts of equipment put into service during construction and operated by Owner, submit completed documents within ten days after acceptance.
   2. Submit one copy of completed documents 15 days prior to final inspection. This copy will be reviewed and returned after final inspection, with Engineer comments. Revise content of all document sets as required prior to final submission.
   3. Submit two sets of revised final documents in final form within 10 days after final inspection.
C. Warranties and Bonds:
   1. For equipment or component parts of equipment put into service during construction with Owner's permission, submit documents within 10 days after acceptance.
   2. Make other submittals within 10 days after Date of Substantial Completion, prior to final Application for Payment.
   3. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit within 10 days after acceptance, listing the date of acceptance as the beginning of the warranty period.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.1 PROJECT RECORD DOCUMENTS
A. Maintain on site one set of the following record documents; record actual revisions to the Work:
   1. Drawings.
   2. Addenda.
   3. Change Orders and other modifications to the Contract.
B. Ensure entries are complete and accurate, enabling future reference by Owner.
C. Store record documents separate from documents used for construction.
D. Record information concurrent with construction progress.
E. Record Drawings: Legibly mark each item to record actual construction including:
   1. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
   2. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.

3. Field changes of dimension and detail.
4. Details not on original Contract drawings.

3.2 OPERATION AND MAINTENANCE DATA

A. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.
B. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams. Do not use Project Record Documents as maintenance drawings.
C. Typed Text: As required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.

3.3 OPERATION AND MAINTENANCE DATA FOR EQUIPMENT AND SYSTEMS

A. For Each Item of Equipment and Each System:
   1. Description of unit or system, and component parts.
   2. Identify function, normal operating characteristics, and limiting conditions.
   3. Include performance curves, with engineering data and tests.
   4. Complete nomenclature and model number of replaceable parts.
B. Where additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specific products.
C. Operating Procedures: Include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut-down, and emergency instructions. Include summer, winter, and any special operating instructions.
D. Provide servicing and lubrication schedule, and list of lubricants required.
E. Include manufacturer's printed operation and maintenance instructions.
F. Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
G. Provide Contractor's coordination drawings, with color coded piping diagrams as installed.
H. Include test and balancing reports.

3.4 WARRANTIES AND BONDS

A. Obtain warranties and bonds, executed in duplicate by responsible Subcontractors, suppliers, and manufacturers, within 10 days after completion of the applicable item of work. Except for items put into use with Owner's permission, leave date of beginning of time of warranty until Date of Substantial completion is determined.
B. Verify that documents are in proper form, contain full information, and are notarized.
C. Co-execute submittals when required.
D. Retain warranties and bonds until time specified for submittal.

END OF SECTION

SECTION 02 4100
DEMOLITION

PART 1 GENERAL

1.1 SECTION INCLUDES
A. Selective demolition of building elements for alteration purposes.

1.2 RELATED REQUIREMENTS
A. Section 01 1000 - Summary: Limitations on Contractor's use of site and premises.
B. Section 01 5000 - Temporary Facilities and Controls: Site fences, security, protective barriers, and waste removal.
C. Section 01 7000 - Execution and Closeout Requirements: Project conditions; protection of bench marks, survey control points, and existing construction to remain; reinstallation of removed products; temporary bracing and shoring.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.1 GENERAL PROCEDURES AND PROJECT CONDITIONS
A. Comply with applicable codes and regulations for demolition operations and safety of adjacent structures and the public.
   1. Obtain required permits.
   2. Take precautions to prevent catastrophic or uncontrolled collapse of structures to be removed; do not allow worker or public access within range of potential collapse of unstable structures.
   3. Provide, erect, and maintain temporary barriers and security devices.
   4. Conduct operations to minimize effects on and interference with adjacent structures and occupants.
B. Do not begin removal until receipt of notification to proceed from Owner.

3.2 SELECTIVE DEMOLITION FOR ALTERATIONS
A. Remove existing work as indicated and as required to accomplish new work.
   1. Remove items indicated on drawings.
      a. Cut openings in drywall or other materials for instalaltion of card readers and/or cameras, including all wiring and pathways.
B. Protect existing work to remain.
   1. Perform cutting to accomplish removals neatly and as specified for cutting new work.
   2. Repair adjacent construction and finishes damaged during removal work.
   3. Patch and Paint as specified for patching new work.

3.3 DEBRIS AND WASTE REMOVAL
A. Remove debris, junk, and trash from site.
B. Leave site in clean condition, ready for subsequent work.
C. Clean up spillage and wind-blown debris from public and private lands.

END OF SECTION

SECTION 03 3000
CAST-IN-PLACE CONCRETE

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Concrete formwork.
B. Elevated concrete slabs.
C. Floors and slabs on grade.
D. Concrete foundation walls.
E. Footings
F. Concrete reinforcement.
G. Joint devices associated with concrete work.
H. Miscellaneous concrete elements, including equipment pads, equipment pits, light pole bases, flagpole bases, thrust blocks, and manholes.
I. Concrete curing.

1.2 REFERENCE STANDARDS

A. ACI 117 - Specifications for Tolerances for Concrete Construction and Materials; 2010 (Reapproved 2015).
B. ACI 211.1 - Standard Practice for Selecting Proportions for Normal, Heavyweight, and Mass Concrete; 1991 (Reapproved 2009).
C. ACI 301 - Specifications for Structural Concrete; 2016.
D. ACI 302.1R - Guide to Concrete Floor and Slab Construction; 2015.
E. ACI 304R - Guide for Measuring, Mixing, Transporting, and Placing Concrete; 2000 (Reapproved 2009).
F. ACI 305R - Guide to Hot Weather Concreting; 2010.
G. ACI 306R - Guide to Cold Weather Concreting; 2016.
H. ACI 308R - Guide to External Curing of Concrete; 2016.
I. ACI 318 - Building Code Requirements for Structural Concrete and Commentary; 2014 (Errata 2018).
J. ACI 347R - Guide to Formwork for Concrete; 2014, with Errata (2017).
K. ASTM C1602/C1602M - Standard Specification for Mixing Water Used in the Production of Hydraulic Cement Concrete; 2012.
L. ASTM C33/C33M - Standard Specification for Concrete Aggregates; 2018.
M. ASTM C39/C39M - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens; 2021.
N. ASTM C94/C94M - Standard Specification for Ready-Mixed Concrete; 2021a.
O. ASTM C143/C143M - Standard Test Method for Slump of Hydraulic-Cement Concrete; 2020.
P. ASTM C150/C150M - Standard Specification for Portland Cement; 2020.
Q. ASTM C173/C173M - Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method; 2016.
R. ASTM C260/C260M - Standard Specification for Air-Entraining Admixtures for Concrete; 2010a (Reapproved 2016).
S. ASTM C494/C494M - Standard Specification for Chemical Admixtures for Concrete; 2019.
T. ASTM C618 - Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete; 2019.
U. ASTM C685/C685M - Standard Specification for Concrete Made by Volumetric Batching and Continuous Mixing; 2017.
V. ASTM C881/C881M - Standard Specification for Epoxy-Resin-Base Bonding Systems for Concrete; 2020a.

W. ASTM C1059/C1059M - Standard Specification for Latex Agents for Bonding Fresh to Hardened Concrete; 2021.

1.3 SUBMITTALS

A. Product Data: Submit manufacturers' data on manufactured products showing compliance with specified requirements and installation instructions.
B. Mix Design: Submit proposed concrete mix design.
   1. Indicate proposed mix design complies with requirements of ACI 301, Section 4 - Concrete Mixtures.
   2. Indicate proposed mix design complies with requirements of ACI 318, Chapter 5 - Concrete Quality, Mixing and Placing.
C. Test Reports: Submit report for each test or series of tests specified.
D. Project Record Documents: Accurately record actual locations of embedded utilities and components that will be concealed from view upon completion of concrete work.
E. Jointing Layout: see paragraph 3.4 of this section.

1.4 QUALITY ASSURANCE

A. Perform work of this section in accordance with ACI 301 and ACI 318.
B. Follow recommendations of ACI 305R when concreting during hot weather.
C. Follow recommendations of ACI 306R when concreting during cold weather.

PART 2 PRODUCTS

2.1 FORMWORK

A. Formwork Design and Construction: Comply with guidelines of ACI 347R to provide formwork that will produce concrete complying with tolerances of ACI 117.
B. Form Materials: Contractor's choice of standard products with sufficient strength to withstand hydrostatic head without distortion in excess of permitted tolerances.
   1. Form Facing for Exposed Finish Concrete: Contractor's choice of materials that will provide smooth, stain-free final appearance.
   2. Form Coating: Release agent that will not adversely affect concrete or interfere with application of coatings.
   3. Form Ties: Cone snap type that will leave no metal within 1-1/2 inches of concrete surface.

2.2 REINFORCEMENT MATERIALS

A. Reinforcing Steel: ASTM A615/A615M, Grade 60 (60,000 psi).
   1. Type: Deformed billet-steel bars.
   2. Finish: Unfinished, unless otherwise indicated.
B. Steel Welded Wire Reinforcement (WWR): Galvanized, plain type, ASTM A1064/A1064M.
   1. Form: Coiled Rolls.
   2. WWR Style: 4 x 8-W6 x W10.
C. Reinforcement Accessories:
   1. Tie Wire: Annealed, minimum 16 gage, 0.0508 inch.
   2. Chairs, Bolsters, Bar Supports, Spacers: Sized and shaped for adequate support of reinforcement during concrete placement.
   3. Provide stainless steel, galvanized, plastic, or plastic coated steel components for placement within 1-1/2 inches of weathering surfaces.

2.3 CONCRETE MATERIALS

A. Cement: ASTM C150/C150M, Type I - Normal Portland type.
   1. Acquire cement for entire project from same source.
B. Fine and Coarse Aggregates: ASTM C33/C33M.
   1. Acquire aggregates for entire project from same source.

C. Fly Ash: ASTM C618, Class C or F.
D. Calcined Pozzolan: ASTM C618, Class N.
E. Silica Fume: ASTM C1240, proportioned in accordance with ACI 211.1.

2.4 ADMIXTURES

A. Do not use chemicals that will result in soluble chloride ions in excess of 0.1 percent by weight of cement.
B. Air Entrainment Admixture: ASTM C260/C260M.
C. High Range Water Reducing and Retarding Admixture: ASTM C494/C494M Type G.
D. High Range Water Reducing Admixture: ASTM C494/C494M Type F.
E. Water Reducing and Accelerating Admixture: ASTM C494/C494M Type E.

2.5 ACCESSORY MATERIALS

A. Underslab Vapor Retarder: Sheet material complying with ASTM E1745, Class A; stated by manufacturer as suitable for installation in contact with soil or granular fill under concrete slabs. The use of single ply polyethylene is prohibited.
   1. Installation: Comply with ASTM E1643.
   2. Accessory Products: Vapor retarder manufacturer's recommended tape, adhesive, mastic, prefabricated boots, etc., for sealing seams and penetrations.

2.6 BONDING AND JOINTING PRODUCTS

A. Latex Bonding Agent: Non-redispersable acrylic latex, complying with ASTM C1059/C1059M, Type II.
B. Epoxy Bonding System:
   1. Complying with ASTM C881/C881M and of Type required for specific application.
C. Slab Isolation Joint Filler: 1/2 inch thick, height equal to slab thickness, with removable top section that will form 1/2 inch deep sealant pocket after removal.
D. Slab Construction Joint Devices: Combination keyed joint form and screed, galvanized steel, with rectangular or round knockout holes for conduit or rebar to pass through joint form at 6 inches on center; ribbed steel stakes for setting.

2.7 CURING MATERIALS

A. Evaporation Reducer: Liquid thin-film-forming compound that reduces rapid moisture loss caused by high temperature, low humidity, and high winds; intended for application immediately after concrete placement.
B. Curing Compound, Naturally Dissipating: Clear, water-based, liquid membrane-forming compound; complying with ASTM C309.
C. Curing Agent, Water-Cure Equivalent Type: Clear, water-based, non-film-forming, liquid-water cure replacement agent.

2.8 CONCRETE MIX DESIGN

A. Proportioning Normal Weight Concrete: Comply with ACI 211.1 recommendations.
B. Concrete Strength: Establish required average strength for each type of concrete on the basis of field experience or trial mixtures, as specified in ACI 301.
   1. For trial mixtures method, employ independent testing agency acceptable to Engineer for preparing and reporting proposed mix designs.
C. Admixtures: Add acceptable admixtures as recommended in ACI 211.1 and at rates recommended or required by manufacturer.
D. Normal Weight Concrete:
   1. Compressive Strength, when tested in accordance with ASTM C39/C39M at 28 days: 4,000 pounds per square inch.
   2. Fly Ash Content: Maximum 15 percent of cementitious materials by weight.
   3. Water-Cement Ratio: Maximum 40 percent by weight.
   4. Total Air Content: 5 percent, determined in accordance with ASTM C173/C173M.

5. Maximum Slump: 4 inches.
6. Maximum Aggregate Size: 3/4 inch.

2.9 MIXING

A. Transit Mixers: Comply with ASTM C94/C94M.
B. Adding Water: If concrete arrives on-site with slump less than suitable for placement, do not add water that exceeds the maximum water-cement ratio or exceeds the maximum permissible slump.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify lines, levels, and dimensions before proceeding with work of this section.

3.2 PREPARATION

A. Formwork: Comply with requirements of ACI 301. Design and fabricate forms to support all applied loads until concrete is cured, and for easy removal without damage to concrete.
B. Where new concrete is to be bonded to previously placed concrete, prepare existing surface by cleaning and applying bonding agent in according to bonding agent manufacturer's instructions.
   1. Use epoxy bonding system for bonding to damp surfaces, for structural load-bearing applications, and where curing under humid conditions is required.
   2. Use latex bonding agent only for non-load-bearing applications.
C. Interior Slabs on Grade: Install vapor retarder under interior slabs on grade. Lap joints minimum 6 inches. Seal joints, seams and penetrations watertight with manufacturer's recommended products and follow manufacturer's written instructions. Repair damaged vapor retarder before covering.

3.3 INSTALLING REINFORCEMENT AND OTHER EMBEDDED ITEMS

A. Comply with requirements of ACI 301. Clean reinforcement of loose rust and mill scale, and accurately position, support, and secure in place to achieve not less than minimum concrete coverage required for protection.
B. Install welded wire reinforcement in maximum possible lengths, and offset end laps in both directions. Splice laps with tie wire.

3.4 PLACING CONCRETE

A. Place concrete in accordance with ACI 304R.
B. Place concrete for floor slabs in accordance with ACI 302.1R.
C. Ensure reinforcement, inserts, waterstops, embedded parts, and formed construction joint devices will not be disturbed during concrete placement.
D. Finish floors level and flat, unless otherwise indicated, within the tolerances specified below.

3.5 SLAB JOINTING

A. Concrete contractor to provide jointing layout to Engineer for review. Engineer will review, amend, and return for final approvaed jointing layout.
B. Anchor joint fillers and devices to prevent movement during concrete placement.
C. Isolation Joints: Use preformed joint filler with removable top section for joint sealant, total height equal to thickness of slab, set flush with top of slab.

3.6 FLOOR FLATNESS AND LEVELNESS TOLERANCES

A. Maximum Variation of Surface Flatness:
   1. Exposed Concrete Floors: 1/4 inch in 10 feet.
   2. Under Seamless Resilient Flooring: 1/4 inch in 10 feet.
   3. Under Carpeting: 1/4 inch in 10 feet.
B. Correct the slab surface if tolerances are less than specified.

C. Correct defects by grinding or by removal and replacement of the defective work. Areas requiring corrective work will be identified. Re-measure corrected areas by the same process.

3.7 CONCRETE FINISHING

A. Repair surface defects, including tie holes, immediately after removing formwork.
B. Unexposed Form Finish: Rub down or chip off fins or other raised areas 1/4 inch or more in height.
C. Exposed Form Finish: Rub down or chip off and smooth fins or other raised areas 1/4 inch or more in height. Provide finish as follows:
   1. Smooth Rubbed Finish: Wet concrete and rub with carborundum brick or other abrasive, not more than 24 hours after form removal.
D. Concrete Slabs: Finish to requirements of ACI 302.1R, and as follows:
   1. Surfaces to Receive Thick Floor Coverings: "Wood float" as described in ACI 302.1R; thick floor coverings include quarry tile, ceramic tile, and Portland cement terrazzo with full bed setting system.
   2. Surfaces to Receive Thin Floor Coverings: "Steel trowel" as described in ACI 302.1R; thin floor coverings include carpeting, resilient flooring, seamless flooring, resinous matrix terrazzo, thin set quarry tile, and thin set ceramic tile.
   3. Other Surfaces to Be Left Exposed: Trowel as described in ACI 302.1R, minimizing burnish marks and other appearance defects.
E. In areas with floor drains, maintain floor elevation at walls; pitch surfaces uniformly to drains at 1:100 nominal.

3.8 CURING AND PROTECTION

A. Comply with requirements of ACI 308R. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.
B. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.
C. Surfaces Not in Contact with Forms:
   1. Initial Curing: Start as soon as free water has disappeared and before surface is dry. Keep continuously moist for not less than three days by water ponding, water-saturated sand, water-fog spray, or saturated burlap.
   2. Final Curing: Begin after initial curing but before surface is dry.

3.9 FIELD QUALITY CONTROL

A. An independent testing agency will perform field quality control tests, as specified in Section 01 4000 - Quality Requirements.
B. Provide free access to concrete operations at project site and cooperate with appointed firm.
C. Tests of concrete and concrete materials may be performed at any time to ensure compliance with specified requirements.
D. Compressive Strength Tests: ASTM C39/C39M, for each test, mold and cure four concrete test cylinders. Obtain test samples for every 25 cubic yards or less of concrete placed.
E. Take one additional test cylinder during cold weather concreting, cured on job site under same conditions as concrete it represents.
F. Perform one slump test for each set of test cylinders taken, following procedures of ASTM C143/C143M.
G. Breaks: 1-3day; 1-7day; 1-28day; 1-HOLD

3.10 DEFECTIVE CONCRETE

A. Test Results: The testing agency shall report test results in writing to Engineer and Contractor within 48 hours of test.
B. Defective Concrete: Concrete not complying with required lines, details, dimensions, tolerances or specified requirements.

C. Repair or replacement of defective concrete will be determined by the Engineer. The cost of additional testing shall be borne by Contractor when defective concrete is identified.
D. Do not patch, fill, touch-up, repair, or replace exposed concrete except upon express direction of Engineer for each individual area.

3.11 PROTECTION

A. Do not permit traffic over unprotected concrete floor surface until fully cured.

END OF SECTION

SECTION 08 7100
DOOR HARDWARE

PART 1 GENERAL

1.1 SECTION INCLUDES
A. Hardware for wood, aluminum, and hollow metal doors.
B. Electrically operated and controlled hardware.

1.2 RELATED REQUIREMENTS
A. Section 28 1000 - Access Control: Electronic access control devices.

1.3 REFERENCE STANDARDS
A. BHMA A156.1 - Standard for Butts and Hinges; 2021.
B. BHMA A156.2 - Bored and Preassembled Locks and Latches; 2022.
C. BHMA A156.3 - American National Standard for Exit Devices; 2014.
D. BHMA A156.13 - Mortise Locks & Latches Series 1000; 2022.
E. BHMA A156.25 - Electrified Locking Devices; 2023.
F. BHMA A156.31 - Electric Strikes and Frame Mounted Actuators; 2024.
G. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
H. NFPA 80 - Standard for Fire Doors and Other Opening Protectives; 2025.
I. UL (DIR) - Online Certifications Directory; Current Edition.

1.4 ADMINISTRATIVE REQUIREMENTS
A. Coordinate the manufacture, fabrication, and installation of products that door hardware is installed on.
B. Sequence installation to ensure utility connections are achieved in an orderly and expeditious manner.
C. Preinstallation Meeting: Convene a preinstallation meeting one week prior to commencing work of this section; attendance is required by affected installers and the following:
    1. Engineer.
    2. Hardware Installer.
    3. Owner's Security Consultant.
    4. Access Control Installer.
D. Keying Requirements Meeting:
    1. Owner will schedule meeting at project site prior to Contractor occupancy.
    2. Attendance Required:
        a. Contractor.
        b. Owner.
        c. Engineer.
        d. Hardware Installer.
        e. Access Control Installer
        f. Owner's Security Consultant.
    3. Agenda:
        a. Establish keying requirements.
        b. Verify locksets and locking hardware are functionally correct for project requirements.
        c. Verify that keying and programming complies with project requirements.
    4. Deliver established keying requirements to manufacturers.

1.5 SUBMITTALS
A. Product Data: Manufacturer's catalog literature for each type of hardware, marked to clearly show products to be furnished for this project, and includes construction details, material

descriptions, finishes, and dimensions and profiles of individual components.

B. Shop Drawings - Door Hardware Schedule: Submit detailed listing that includes each item of hardware to be installed on each door. Use door numbering scheme as included in Contract Documents.
   1. Provide complete description for each door listed.

1.6 WARRANTY

A. Warranty against defects in material and workmanship for period indicated, from Date of Substantial Completion.
   1. Locksets and Cylinders: Three years, minimum.
   2. Other Hardware: Two years, minimum.

PART 2 PRODUCTS

2.1 DESIGN AND PERFORMANCE CRITERIA

A. Provide door hardware as required to make existing doors fully functional, compliant with applicable codes, and secure to extent indicated.

B. Provide individual items of single type, of same model, and by same manufacturer.

C. Electrically Operated and/or Controlled Hardware: Provide necessary power supplies, power transfer hinges, relays, and interfaces as required for proper operation; provide wiring between hardware and control components and to building power connection in compliance with NFPA 70.
   1. Refer to Section 28 1000 for additional access control system requirements.

2.2 HINGES

A. Hinges: Comply with BHMA A156.1, Grade 1.
   1. Provide power transfer hinges on every door with panic hardware.
   2. Provide power transfer hinges where electrified hardware is mounted in door leaf.

2.3 EXIT DEVICES

A. Exit Devices: Comply with BHMA A156.3, Grade 1.
   1. Lever design to match lockset trim.
   2. Provide cylinder with cylinder dogging or locking trim.
   3. Provide exit devices properly sized for door width and height.
   4. Provide strike as recommended by manufacturer for application indicated.
   5. Provide UL (DIR) listed exit device assemblies for fire-rated doors and panic device assemblies for non-fire-rated doors.

2.4 ELECTRIC STRIKES

A. Electric Strikes: Comply with BHMA A156.31, Grade 1.
   1. Provide UL (DIR) listed burglary-resistant electric strike; style to suit locks.
   2. Provide non-handed 24 VDC electric strike suitable for door frame material and scheduled lock configuration.
   3. Provide field selectable Fail Safe/Fail Secure modes.
   4. Provide transformer and rectifier as necessary for complete installation.

2.5 LOCK CYLINDERS

A. Lock Cylinders: Provide key access on outside of each lock, unless otherwise indicated.
   1. Provide cylinders from same manufacturer as locking device.
   2. Provide cams and/or tailpieces as required for locking devices.
   3. Within specific Door Sections, when provisions for lock cylinder are being referenced to this Section, provide specified lock cylinder and keyed to building keying system, unless otherwise indicated.

2.6 CYLINDRICAL LOCKS

A. Cylindrical Locks (Bored): Comply with BHMA A156.2, Grade 1, 4000 Series.
   1. Bored Hole: 2-1/8 inch diameter.
   2. Backset: 2-3/4 inch unless otherwise indicated.
   3. Strikes: Provide manufacturer's standard strike for each latchset or lockset with strike box and curved lip extending to protect frame in compliance with indicated requirements.
      a. Finish: To match lock or latch.
   4. Provide a lock for each door, unless otherwise indicated that lock is not required.
   5. Provide an office lockset for swinging door where hardware set is not indicated.

2.7 MORTISE LOCKS

A. Mortise Locks: Comply with BHMA A156.13, Grade 1, Security, 1000 Series.
   1. Latchbolt Throw: 3/4 inch, minimum.
   2. Deadbolt Throw: 1 inch, minimum.
   3. Backset: 2-3/4 inch unless otherwise indicated.
   4. Strikes: Provide manufacturer's standard strike for each latchset or lockset with strike box and curved lip extending to protect frame in compliance with indicated requirements.
      a. Finish: To match lock or latch.

2.8 ELECTROMECHANICAL LOCKS

A. Electromechanical Locks: Comply with BHMA A156.25, Grade 1.
   1. Provide motor-driven or solenoid-driven locks, with strike that is applicable to frame.

2.9 ACCESS MANAGEMENT SYSTEMS

A. Access Management Systems: Comply with guidelines of BHMA A156.25, and including necessary hardware for fully functional system.
   1. Reader Formats: Provide magnetic stripe, proximity, dual validation, or key Fob to activate access system functionality.
   2. Door Locking Hardware: Provide applicable cylindrical locksets, panic hardware, or mortise locksets in compliance with project access control requirements.

2.10 FINISHES

A. Match existing finish.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify all existing doors and frames and coordinate with door manufacturer for hinges, locksets, cylinders etc. to work with existing doors and frames.
B. Verify that doors and frames are ready to receive this work; labeled, fire-rated doors and frames are properly installed, and dimensions are as indicated on shop drawings.

3.2 INSTALLATION

A. Install hardware in accordance with manufacturer's instructions and applicable codes.
B. Install hardware on fire-rated doors and frames in accordance with applicable codes and NFPA 80.
C. Use templates provided by hardware item manufacturer.
D. Coordinate with low-voltage installer for requirements access control system.

3.3 FIELD QUALITY CONTROL

A. Perform field test to verify that electrified hardware is working in conjunction with access control system.

B. Perform field inspection and testing under provisions of Section 01 4000 - Quality Requirements.

END OF SECTION

SECTION 09 5100
ACOUSTICAL CEILINGS - USG

PART 1 GENERAL

1.1 SECTION INCLUDES
A. Replacement and repair of existing grid systems.
   1. Suspended metal grid ceiling systems.
   2. Acoustical units.

1.2 RELATED REQUIREMENTS
A. Section 01 3000 - Administrative Requirements

1.3 REFERENCE STANDARDS
A. ASTM C635/C635M - Standard Specification for Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings; 2022.
B. ASTM C636/C636M - Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels; 2019.
C. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2022.
D. ASTM E1264 - Standard Classification for Acoustical Ceiling Products; 2023.

1.4 ADMINISTRATIVE REQUIREMENTS
A. Coordination: Coordinate work of this section with installation of mechanical and electrical components and with other construction activities affected by work of this section.
B. Sequencing: Schedule work of affected trades to minimize or eliminate installation conflicts and rework.
   1. Ensure that acoustical ceilings are not installed until building is enclosed, sufficient heat is provided, dust generating activities have terminated, and overhead work is completed, tested, and approved. Do not install acoustical units until after interior wet work is dry.

1.5 SUBMITTALS
A. See Section 01 3000 - Administrative Requirements for submittal procedures.
B. Product Data: Provide data on suspension system components and acoustical units.

1.6 FIELD CONDITIONS
A. Maintain uniform temperature of minimum 60 degrees F, and maximum humidity of 40 percent before, during, and after acoustical unit installation.

PART 2 PRODUCTS

2.1 CEILING ASSEMBLIES
A. Acoustical Ceiling Assembly Type APC-1:
   1. Acoustical Units: match existing
      a. Panel Size: match existing
      b. Panel Edge: match existing
      c. Color: Flat White.
   2. Suspension Grid: match existing

2.2 CEILING COMPONENT PRODUCTS
A. Acoustical Units:
   1. Acoustical Units - General: ASTM E1264, Fire Class A.
      a. Noise Reduction Coefficient (NRC) rating, Ceiling Attenuation Class (CAC) rating, and Light Reflectance Coefficient (LR) performance for each type of unit specified below, as determined in accordance with ASTM E1264.

b. Fire Class / Surface Burning Characteristics: Determined in accordance with test method ASTM E84.

2. Acoustical Panels: Mineral fiber with membrane-faced overlay, with the following characteristics:
   a. Classification: ASTM E1264 Type IV.

B. Suspension Systems:
1. Metal Suspension Systems - General: Complying with ASTM C635/C635M; die cut and interlocking components, with wall angles and moldings, curtain pockets, and splices as required.
2. Exposed Acoustical Suspension System: G90 Hot-dipped galvanized steel grid with aluminum cap.
   a. Structural Classification: Intermediate-duty, when tested in accordance with ASTM C635/C635M.
   b. Profile: Tee; 15/16 inch face width.
   c. Color: Flat White 050.

C. Moldings and Trim:
1. Edge Molding, Expansion Joints, and Splices - General: Same material, thickness, and finish as metal pan panels, unless otherwise indicated.
2. Perimeter Wall Moldings: Same metal and finish as grid.
   a. Size: As required for installation conditions.
   b. Acoustical Sealant For Perimeter Moldings: Nonhardening, nonskinning, for use in conjunction with suspended ceiling system.
3. Trim Accessories: Manufacturer's standard clips, cleats splice plates, extension plates, closure plates, corner pieces, and similar accessories required for a complete installation.

2.3 ACCESSORIES

A. Support Channels, Carriers, and Hangers: Galvanized steel; size and type to suit application and ceiling system flatness requirement specified.
B. Suspension Wire: Size and type as required for application, seismic requirements, and ceiling system flatness requirement specified.
1. Concealed Suspension:
   a. Suspension Wire: Steel, annealed, galvanized finish, 12 gauge, 0.0808 diameter, complying with ASTM A641/A641M.

C. Touch-Up Paint for Exposed Surfaces: Type and color to match acoustical units and suspension system grid and trim elements.
D. Touch-Up Paint For Concealed Items: Zinc rich type, as recommended by ceiling system manufacturer.

2.4 FABRICATION

A. Shop fabricate ceiling components to the greatest extent possible.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify existing conditions before starting work.
B. Verify that layout of hangers will not interfere with other work.
C. Start of installation constitutes acceptance of project conditions.

3.2 PREPARATION

A. Coordinate the location of hangers with other work.
B. Install ceiling system after major above-ceiling work is complete.

3.3 INSTALLATION - SUSPENSION SYSTEM

A. Install suspension system in accordance with ASTM C636/C636M and manufacturer's instructions and as supplemented in this section.
B. Install hangers and inserts coordinated with overhead work. Provide additional hangers and supports as required.
C. Rigidly secure system, including integral mechanical and electrical components, for maximum deflection of 1:360.
D. Suspension System, Nonseismic: Hang suspension system independent of walls, columns, ducts, pipes and conduit. Where carrying members are spliced, avoid visible displacement of face plane of adjacent members.
E. Where ducts, facility services, or equipment prevent the regular spacing of hangers, reinforce the nearest affected hangers and related carrying channels to span the extra distance.
F. Do not support components on main runners or cross runners if weight causes total dead load to exceed deflection capability.
G. Support fixture loads using supplementary hangers located within 6 inches of each corner, or support components independently.
H. Do not eccentrically load system or induce rotation of runners.
I. Edge Moldings: Install at intersection of ceiling and vertical surfaces and penetrations, using components of maximum length; set level. Provide edge moldings at junction with other ceiling finishes. Miter corners. Provide preformed edge closures to match bullnosed cornered partitions.
    1. Use longest practical lengths.

3.4 INSTALLATION - ACOUSTICAL UNITS

A. Install acoustical units in accordance with manufacturer's instructions.
B. Fit acoustical units in place, free from damaged edges or other defects detrimental to appearance and function.
C. Fit edge trim neatly against abutting surfaces.
D. Install acoustical units level, in uniform plane, and free from twist, warp, and dents.
E. Cutting Acoustical Units:
    1. Make field cut edges of same profile as factory edges.
F. Where round obstructions occur, provide preformed closures to match perimeter molding.

3.5 TOLERANCES

A. Maximum Variation from Flat and Level Surface: 1/8 inch in 10 feet.
B. Maximum Variation from Plumb of Grid Members Caused by Eccentric Loads: Two degrees.

3.6 CLEANING

A. Clean and touch up minor finish damage. Remove and replace components that cannot be successfully cleaned and repaired.

END OF SECTION

SECTION 09 9000
PAINTING AND COATING

PART 1 GENERAL

1.1 SECTION INCLUDES
A. Surface preparation.
B. Field application of paints and other coatings.
C. Scope: Touch up finish all altered/damaged interior surfaces exposed to view.
D. Do Not Paint or Finish the Following Items:
   1. Items specified to be factory-finished; materials and products having factory-applied primers are not considered factory finished.
   2. Items indicated to receive other finishes.
   3. Fire rating labels, equipment serial number and capacity labels, and operating parts of equipment.
   4. Stainless steel and anodized aluminum items.
   5. Ceramic and other tiles.
   6. Glass.
   7. Acoustical materials, unless specifically so indicated.
   8. Concealed pipes, ducts, and conduits.

1.2 DEFINITIONS
A. Conform to ASTM D16 for interpretation of terms used in this section.

1.3 REFERENCE STANDARDS
A. 40 CFR 59, Subpart D - National Volatile Organic Compound Emission Standards for Architectural Coatings; U.S. Environmental Protection Agency; current edition.
B. ASTM D16 - Standard Terminology for Paint, Related Coatings, Materials, and Applications; 2019.
C. Green Seal Environmental Standards, GC-03, Anti-Corrosive Paints (1997).
D. SSPC (PM1) - Good Painting Practice: SSPC Painting Manual, Vol. 1; Society for Protective Coatings; Fourth Edition.

1.4 SUBMITTALS
A. See Section 01 3000 -Administration Requirements for submittal procedures.
B. Product Data: Prepare schedule of paint coatings for application to specific substrates, and provide data on all finishing products, including VOC content and manufacturer's application recommendations.
C. Certification: By manufacturer that all paints and coatings comply with VOC limits specified.
D. Manufacturer's Instructions: Indicate special surface preparation procedures.
E. Maintenance Data: Submit data on cleaning, touch-up, and repair of painted and coated surfaces.
F. Maintenance Materials: Furnish the following for GSCU's use in maintenance of project.
   1. See Section 01 6000 - Product Requirements for additional provisions.
   2. Extra Paint and Coatings: 1 gallon of each color; store where directed.
   3. Label each container with color in addition to the manufacturer's label.

1.5 QUALITY ASSURANCE
A. Manufacturer Qualifications: Company specializing in manufacturing the products specified, with minimum 5 years documented experience.
B. Applicator Qualifications: Company specializing in performing the type of Work specified with minimum 5 years documented experience.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.
B. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.
C. Paint Materials: Store at minimum ambient temperature of 45 degrees Fahrenheit and a maximum of 90 degrees Fahrenheit, in ventilated area, and as required by manufacturer's instructions.

1.7 FIELD CONDITIONS

A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.
B. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.
    1. Do not apply exterior coatings during rain or snow, or when relative humidity is outside the humidity ranges required by the paint product manufacturer.
    2. Minimum Application Temperatures for Latex Paints: 55 degrees Fahrenheit unless required otherwise by manufacturer's instructions.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Provide all paint and coating products from the same manufacturer to the greatest extent possible.
B. Basis of Design Color Selections: As indicated in Interior Finishes Schedule on Drawings.
C. Basis of Design Top Coat Products and Sheen (regardless of color selection):
    1. Sherwin-Williams; ProMar 200 Zero VOC Interior Acrylic Latex, eggshell sheen; use everywhere except as noted below.
    2. Sherwin-Williams; Pro Industrial DTM Acrylic Latex; semi-gloss sheen; use for interior metal doors, frames, and metal fabrications to be painted.
D. Other Acceptable Manufacturers:
    1. Benjamin Moore & Co: www.benjaminmoore.com/#sle.
    2. Diamond Vogel Paint: www.diamondvogel.com.
    3. PPG Architectural Finishes, Inc.: www.ppgaf.com.
    4. Pratt & Lambert Paints: www.prattandlambert.com/#sle.
    5. Substitutions: See Section 01 6000 - Product Requirements.
E. Primer/Sealers: Same manufacturer as top coats.
F. Block Fillers: Same manufacturer as top coats.

2.2 PAINTS AND COATINGS - GENERAL

A. Provide manufacturer's highest quality product for type of coating specified.
B. Paints and Coatings: Ready-mixed, unless intended to be a field-catalyzed coating.
    1. Provide paints and coatings of a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating, with good flow and brushing properties, and capable of drying or curing free of streaks or sags.
    2. Provide materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.
    3. For opaque finishes, tint each coat including primer coat and intermediate coats, one-half shade lighter than succeeding coat, with final finish coat as base color.
    4. Supply each coating material in quantity required to complete entire project's work from a single production run.

5. Do not reduce, thin, or dilute coatings or add materials to coatings unless such procedure is specifically described in manufacturer's product instructions.

C. Primer/Sealers: Where the manufacturer offers options on primer/sealers for a particular substrate, use primer/sealer categorized as "best" by the manufacturer.

D. Volatile Organic Compound (VOC) Content:
   1. Provide coatings that comply with the most stringent requirements specified in the following:
      a. 40 CFR 59, Subpart D--National Volatile Organic Compound Emission Standards for Architectural Coatings.
   2. Determination of VOC Content: Testing and calculation in accordance with 40 CFR 59, Subpart D (EPA Method 24), exclusive of colorants added to a tint base and water added at project site; or other method acceptable to authorities having jurisdiction.

E. Chemical Content: The following compounds are prohibited:
   1. Aromatic Compounds: In excess of 1.0 percent by weight of total aromatic compounds (hydrocarbon compounds containing one or more benzene rings).
   2. Acrolein, acrylonitrile, antimony, benzene, butyl benzyl phthalate, cadmium, (2-ethylhexyl) di-phthalate, di-n-butyl phthalate, di-n-octyl phthalate, 1,2-dichlorobenzene, diethyl phthalate, dimethyl phthalate, ethylbenzene, formaldehyde, hexavalent chromium, isophorone, lead, mercury, methyl ethyl ketone, methyl isobutyl ketone, methylene chloride, naphthalene, toluene (methylbenzene), 1,1,1-trichloroethane, vinyl chloride.

F. Flammability: Comply with applicable code for surface burning characteristics.

2.3 ACCESSORY MATERIALS

A. Accessory Materials: Provide all primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials required to achieve the finishes specified whether specifically indicated or not; commercial quality.

B. Patching Material: Latex filler.

C. Fastener Head Cover Material: Latex filler.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that surfaces are ready to receive work as instructed by the product manufacturer.

B. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.

C. Test shop-applied primer for compatibility with subsequent cover materials.

D. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces are below the following maximums:
   1. Gypsum Wallboard: 12 percent.
   2. Interior Wood: 15 percent, measured in accordance with ASTM D4442.

3.2 PREPARATION

A. Clean surfaces thoroughly and correct defects prior to coating application.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

C. Remove or mask surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces or finishing.

D. Surfaces: Correct defects and clean surfaces which affect work of this section. Remove or repair existing coatings that exhibit surface defects.

E. Seal surfaces that might cause bleed through or staining of topcoat.

F. Remove mildew from impervious surfaces by scrubbing with solution of tetra-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.

G. Gypsum Board Surfaces to be Painted: Fill minor defects with filler compound. Spot prime defects after repair.
H. Aluminum Surfaces to be Painted: Remove surface contamination by steam or high pressure water. Remove oxidation with acid etch and solvent washing. Apply etching primer immediately following cleaning.
I. Galvanized Surfaces to be Painted: Remove surface contamination and oils and wash with solvent. Apply coat of etching primer.
J. Uncorroded Uncoated Steel and Iron Surfaces to be Painted: Remove grease, mill scale, weld splatter, dirt, and rust. Where heavy coatings of scale are evident, remove by hand wire brushing or sandblasting; clean by washing with solvent. Apply a treatment of phosphoric acid solution, ensuring weld joints, bolts, and nuts are similarly cleaned. Prime paint entire surface; spot prime after repairs.
K. Shop-Primed Steel Surfaces to be Finish Painted: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces. Re-prime entire shop-primed item.
L. Interior Wood Surfaces to Receive Opaque Finish: Wipe off dust and grit prior to priming. Seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after primer has dried; sand between coats. Back prime concealed surfaces before installation.
M. Metal Doors and Frames to be Painted: Prime metal door and frame top and bottom edge surfaces.

3.3 APPLICATION

A. Remove unfinished louvers, grilles, covers, and access panels on mechanical and electrical components and paint separately.
B. Apply products in accordance with manufacturer's instructions.
C. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.
D. Apply each coat to uniform appearance.
E. Sand wood and metal surfaces lightly between coats to achieve required finish.
F. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.
G. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

3.4 FINISHING MECHANICAL AND ELECTRICAL EQUIPMENT

A. Refer to Section 22 0553 and Section 26 0553 for schedule of color coding of equipment, duct work, piping, and conduit.
B. Paint equipment exposed to view, in occupied areas, to match adjacent wall color.
C. Remove louvers, grilles, covers, and access panels on mechanical and electrical components and paint separately.
D. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

3.5 CLEANING

A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.

3.6 PROTECTION

A. Protect finished coatings until completion of project.
B. Touch-up damaged coatings after Substantial Completion.

END OF SECTION

SECTION 11 1200
PARKING CONTROL EQUIPMENT

PART 1 GENERAL

1.1 SECTION INCLUDES
A. Parking access controls.
   1. Barrier gate.
   2. Barrier gate access control.
B. Maintenance.

1.2 DELEGATED DESIGN
A. All elements of this specification section are delegated design to be design and submitted by the installer for review by the EoR.

1.3 REFERENCE STANDARDS
A. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2020.
B. ASTM F2200 - Standard Specification for Automated Vehicular Gate Construction; 2020.
C. ITS (DIR) - Directory of Listed Products; Current Edition.
D. NEMA MG 1 - Motors and Generators; 2021.
E. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
F. UL 325 - Standard for Door, Drapery, Gate, Louver, and Window Operators and Systems; Current Edition, Including All Revisions.
G. UL (DIR) - Online Certifications Directory; Current Edition.

1.4 SUBMITTALS
A. Product Data: Provide data on operating equipment, characteristics, limitations, and temperature range of operation.
B. Shop Drawings: Indicate plan layout of equipment access lanes, curbing, mounting bolt dimensions, conduit and outlet locations, power requirements, and wiring diagrams.
C. Provide schem drawing showing plan view of proposed improvements.
D. Installer's Qualification Statement.
E. Warranty Documentation: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

1.5 QUALITY ASSURANCE
A. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years of documented experience.

1.6 WARRANTY
A. Correct defective Work within a five year period after Date of Substantial Completion.
B. Provide five year manufacturer warranty for operating equipment.

PART 2 PRODUCTS

2.1 DESCRIPTION
A. Parking Control System: Automatic operation at entrance and automatic operation at exit.
B. Provide protection against interference or damage by lightning or other electrical influences; include fuse, over-voltage protection, flash-over protection, and line filter.
C. Entry: Automatic parking access control system is activated upon Card Reader/Access Control System..

D. Exit: Automatic parking access control system is activated upon detection of vehicle by sensing loop in pavement.

2.2 REGULATORY REQUIREMENTS

A. Comply with applicable code and requirements of authorities having jurisdiction for emergency vehicle access.

B. Products Requiring Electrical Connection: Listed and classified by ITS (DIR), UL (DIR), or testing firm acceptable to authorities having jurisdiction as suitable for purpose specified.

2.3 PERFORMANCE CRITERIA

A. Operating Temperature: Minus 20 to 140 degrees F.

B. Humidity: 15 to 95 percent RH noncondensing.

2.4 PARKING ENTRY/EXIT COMPONENTS

A. Barrier Gate - Entry and Exit Control: Provide equipment listed and labeled in compliance with UL 325 safety standards of gate operators and ASTM F2200 construction standards.

1. Classification: Class II - Commercial/General Access, for vehicular gate operator with barrier gate access controls complying with UL 325.
2. Type of Gate: Vehicular horizontal slide gate.
3. Controls: Mechanism in compliance with UL 325 safety standards of gate operators, with cadmium coated steel components to move gate by instant reversing electric motor, enclosed speed reducer operated by self contained, plug-in replaceable controller with slip clutch, and to permit manual operation and gate movement to stop and start at reduced speed if required.
    a. Activate automatic gate reversing switch if an obstacle is sensed while gate is in motion.
    b. Maintain gate in open position until vehicle clears control area.
4. Control Cabinet: Steel, at least 14 gauge, 0.075 inch thick, with weather-tight seams and gaskets; thermally insulated to permit heater to maintain cabinet temperature to equipment operating minimum, flush access doors and panels, tamper proof hardware, master keyed locks, and concealed mounting bolts located inside of units.
5. Barrier Gate Material: Chain link metal fence with smooth bottom edge free of protrusions and openings of 2-1/4 inch or less in size.
6. Barrier Gate Length: Contractor and/or Manufacturer to measure and size gate based on driveway width and existing conditions.
7. Barrier Gate Height: Match Existing fence height.
8. Barrier Gate Support Posts: Steel section; 8 feet high, 2-1/2 inch round; with welded and sealed post cap and base plate.
    a. Finish: Match existing fence.
9. Fail-Safe Operation: Upon loss of primary electrical power, system automatically transfers to fail-safe mode allowing barrier gate to be manually pushed open without special knowledge, keys or releasing mechanisms.

2.5 ELECTRICAL CHARACTERISTICS AND COMPONENTS

A. Electrical Characteristics:

1. 120 volts, single phase, 60 Hz.
2. 15A minimum circuit capacity.

B. Electrical Components: Self-contained, plug-in, and replaceable components that comply with NFPA 70 and are listed and labeled by UL (DIR) or ITS (DIR).

1. Provide wiring for control units, zinc plated connection box, grounded convenience outlet, switch for automatic or manual operation, switch to disconnect power unit, thermostatically controlled with at least 250 watt heater strip, and thermally protected disconnect for motor.

C. Motor: NEMA MG 1 compliant.

D. Backup Power Inverter: Provides electrical power to allow system to remain in operation upon loss of primary electrical power.
E. Wiring Terminations: Provide terminal lugs to match branch circuit conductor quantities, sizes, and materials indicated. Enclose terminal lugs in terminal box sized in compliance with NFPA 70.
F. Disconnect Switch: Factory mount disconnect switch in control panel.

2.6 VEHICLE DETECTION

A. Vehicle Detection: For use in temperature range of minus 40 to 160 degrees F; consisting of detection unit in conjunction with sensing loop to activate parking revenue control device or access control device when vehicle enters or exits.
B. Sensing Loop: 14 gauge, 0.064 inch insulated wire; loop size of 48 by 72 inches, with loop extension cable and detector.
   1. Loop Groove Fill: Cold poured rubberized asphalt emulsion.

2.7 MATERIALS

A. Steel: Hot-dipped galvanized steel sheet, ASTM A653/A653M, with G90/Z275 coating.

PART 3 EXECUTION

3.1 INSTALLATION

A. Install parking control system and components in accordance with manufacturer's instructions and in compliance with requirements.
B. Cut grooves in pavement surface, install vehicle detection loops and lead-in wires, and fill grooves with loop filler.
C. Pour foundations, set poles and install gate. Install any additional fencing to secure site.
D. Install internal electrical wiring, conduit, junction boxes, transformers, circuit breakers, and auxiliary components as required.
E. Install internal electrical wiring, conduit, junction boxes, transformers, circuit breakers, and auxiliary components as required.

3.2 ADJUSTING

A. Adjust system components for smooth operation.

3.3 MAINTENANCE

A. Provide service and maintenance of operating equipment for a period of two years from Date of Substantial Completion.

END OF SECTION

SECTION 26 0519
LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Nonmetallic-sheathed cable.
B. Underground feeder and branch-circuit cable.
C. Metal-clad cable.
D. Wiring connectors.
E. Electrical tape.
F. Heat shrink tubing.
G. Oxide inhibiting compound.
H. Wire pulling lubricant.
I. Cable ties.
J. Firestop sleeves.

1.2 RELATED REQUIREMENTS

A. Section 26 0526 - Grounding and Bonding for Electrical Systems: Additional requirements for grounding conductors and grounding connectors.

1.3 REFERENCE STANDARDS

A. ASTM B3 - Standard Specification for Soft or Annealed Copper Wire; 2013 (Reapproved 2018).
B. ASTM B8 - Standard Specification for Concentric-Lay-Stranded Copper Conductors, Hard, Medium-Hard, or Soft; 2011 (Reapproved 2017).
C. ASTM B33 - Standard Specification for Tin-Coated Soft or Annealed Copper Wire for Electrical Purposes; 2010, with Editorial Revision (2020).
D. ASTM B787/B787M - Standard Specification for 19 Wire Combination Unilay-Stranded Copper Conductors for Subsequent Insulation; 2004 (Reapproved 2020).
E. ASTM D3005 - Standard Specification for Low-Temperature Resistant Vinyl Chloride Plastic Pressure-Sensitive Electrical Insulating Tape; 2017.
F. ASTM D4388 - Standard Specification for Nonmetallic Semi-Conducting and Electrically Insulating Rubber Tapes; 2020.
G. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2015.
H. NECA 120 - Standard for Installing Armored Cable (AC) and Type Metal-Clad (MC) Cable; 2018.
I. NECA 121 - Standard for Installing Nonmetallic-Sheathed Cable (Type NM-B) and Underground Feeder and Branch-Circuit Cable (Type UF); 2007.
J. NEMA WC 70 - Power Cables Rated 2000 Volts or Less for the Distribution of Electrical Energy; 2021.
K. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
L. UL 44 - Thermoset-Insulated Wires and Cables; Current Edition, Including All Revisions.
M. UL 83 - Thermoplastic-Insulated Wires and Cables; Current Edition, Including All Revisions.
N. UL 267 - Outline of Investigation for Wire-Pulling Compounds; Most Recent Edition, Including All Revisions.
O. UL 486A-486B - Wire Connectors; Current Edition, Including All Revisions.
P. UL 486C - Splicing Wire Connectors; Current Edition, Including All Revisions.
Q. UL 486D - Sealed Wire Connector Systems; Current Edition, Including All Revisions.
R. UL 493 - Thermoplastic-Insulated Underground Feeder and Branch-Circuit Cables; Current Edition, Including All Revisions.

S. UL 510 - Polyvinyl Chloride, Polyethylene, and Rubber Insulating Tape; Current Edition, Including All Revisions.
T. UL 719 - Nonmetallic-Sheathed Cables; Current Edition, Including All Revisions.
U. UL 1569 - Metal-Clad Cables; Current Edition, Including All Revisions.

1.4 SUBMITTALS
A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
B. Product Data: Provide manufacturer's standard catalog pages and data sheets for conductors and cables, including detailed information on materials, construction, ratings, listings, and available sizes, configurations, and stranding.

1.5 QUALITY ASSURANCE
A. Comply with requirements of NFPA 70.

PART 2 PRODUCTS

2.1 CONDUCTOR AND CABLE APPLICATIONS
A. Do not use conductors and cables for applications other than as permitted by NFPA 70 and product listing.
B. Provide single conductor building wire installed in suitable raceway unless otherwise indicated, permitted, or required.
C. Nonmetallic-sheathed cable is permitted only as follows:
   1. Where not otherwise restricted, may be used:
      a. Type I and II construction where installed within racway permitted to be installed in Type I and II construction.
D. Underground feeder and branch-circuit cable is permitted only as follows:
   1. Where not otherwise restricted, may be used:
      a. For damp, wet, or corrosive locations as a substitute for NFPA 70, Type NMC nonmetallic-sheathed cable, when nonmetallic-sheathed cable is permitted.
E. Metal-clad cable is permitted only as follows:
   1. Where not otherwise restricted, may be used:
      a. Where concealed in hollow stud walls, above accessible ceilings, and under raised floors for branch circuits up to 20 A.
   2. In addition to other applicable restrictions, may not be used:
      a. Where not approved for use by the authority having jurisdiction.
      b. Where exposed to damage.
      c. For damp, wet, or corrosive locations, unless provided with a PVC jacket listed as suitable for those locations.

2.2 CONDUCTOR AND CABLE GENERAL REQUIREMENTS
A. Provide products that comply with requirements of NFPA 70.
B. Provide products listed, classified, and labeled as suitable for the purpose intended.
C. Unless specifically indicated to be excluded, provide all required conduit, boxes, wiring, connectors, etc. as required for a complete operating system.
D. Comply with NEMA WC 70.
E. Thermoplastic-Insulated Conductors and Cables: Listed and labeled as complying with UL 83.
F. Thermoset-Insulated Conductors and Cables: Listed and labeled as complying with UL 44.
G. Conductors for Grounding and Bonding: Also comply with Section 26 0526.
H. Conductor Material:
   1. Provide copper conductors only. Aluminum conductors are not acceptable for this project. Conductor sizes indicated are based on copper.

2. Copper Conductors: Soft drawn annealed, 98 percent conductivity, uncoated copper conductors complying with ASTM B3, ASTM B8, or ASTM B787/B787M unless otherwise indicated.
3. Tinned Copper Conductors: Comply with ASTM B33.

I. Minimum Conductor Size:
1. Branch Circuits: 12 AWG.
a. Exceptions:
1) 20 A, 120 V circuits longer than 75 feet: 10 AWG, for voltage drop.
2) 20 A, 120 V circuits longer than 150 feet: 8 AWG, for voltage drop.
3) 20 A, 277 V circuits longer than 150 feet: 10 AWG, for voltage drop.
2. Control Circuits: 14 AWG.

J. Where conductor size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.

K. Conductor Color Coding:
1. Color code conductors as indicated unless otherwise required by the authority having jurisdiction. Maintain consistent color coding throughout project.
2. Color Coding Method: Integrally colored insulation.
3. Color Code:
a. 208Y/120 V, 3 Phase, 4 Wire System:
1) Phase A: Black.
2) Phase B: Red.
3) Phase C: Blue.
4) Neutral/Grounded: White.
b. Equipment Ground, All Systems: Green.
c. For modifications or additions to existing wiring systems, comply with existing color code when existing code complies with NFPA 70 and is approved by the authority having jurisdiction.

2.3 SINGLE CONDUCTOR BUILDING WIRE

A. Manufacturers:
1. Copper Building Wire:
a. Cerro Wire LLC: www.cerrowire.com/#sle.
b. Encore Wire Corporation: www.encorewire.com/#sle.
c. General Cable Technologies Corporation: www.generalcable.com/#sle.
d. Service Wire Co: www.servicewire.com/#sle.
e. Southwire Company: www.southwire.com/#sle.

B. Description: Single conductor insulated wire.

C. Conductor Stranding:
1. Feeders and Branch Circuits:
a. Size 10 AWG and Smaller: Solid.
b. Size 8 AWG and Larger: Stranded.

D. Insulation Voltage Rating: 600 V.

E. Insulation:
1. Copper Building Wire: Type THHN/THWN or THHN/THWN-2, except as indicated below.
a. Installed Underground: Type XHHW-2.

2.4 NONMETALLIC-SHEATHED CABLE

A. Description: NFPA 70, Type NM multiple-conductor cable listed and labeled as complying with UL 719, Type NM-B.

B. Conductor Stranding:
1. Size 10 AWG and Smaller: Solid.

2. Size 8 AWG and Larger: Stranded.

C. Insulation Voltage Rating: 600 V.

2.5 UNDERGROUND FEEDER AND BRANCH-CIRCUIT CABLE

A. Description: NFPA 70, Type UF multiple-conductor cable listed and labeled as complying with UL 493, Type UF-B.
B. Provide equipment grounding conductor unless otherwise indicated.
C. Conductor Stranding:
   1. Size 10 AWG and Smaller: Solid.
   2. Size 8 AWG and Larger: Stranded.
D. Insulation Voltage Rating: 600 V.

2.6 METAL-CLAD CABLE

A. Description: NFPA 70, Type MC cable listed and labeled as complying with UL 1569, and listed for use in classified firestop systems to be used.
B. Conductor Stranding:
   1. Size 10 AWG and Smaller: Solid.
   2. Size 8 AWG and Larger: Stranded.
C. Insulation Voltage Rating: 600 V.
D. Insulation: Type THHN, THHN/THWN, or THHN/THWN-2.
E. Grounding: Full-size integral equipment grounding conductor.
F. Armor: Steel, interlocked tape.
G. Provide PVC jacket applied over cable armor where indicated or required for environment of installed location.

2.7 WIRING CONNECTORS

A. Description: Wiring connectors appropriate for the application, suitable for use with the conductors to be connected, and listed as complying with UL 486A-486B or UL 486C as applicable.
B. Connectors for Grounding and Bonding: Comply with Section 26 0526.
C. Wiring Connectors for Splices and Taps:
   1. Copper Conductors Size 8 AWG and Smaller: Use twist-on insulated spring connectors.
   2. Copper Conductors Size 6 AWG and Larger: Use mechanical connectors.
D. Wiring Connectors for Terminations:
   1. Provide terminal lugs for connecting conductors to equipment furnished with terminations designed for terminal lugs.
   2. Provide compression adapters for connecting conductors to equipment furnished with mechanical lugs when only compression connectors are specified.
   3. Stranded Conductors Size 10 AWG and Smaller: Use crimped terminals for connections to terminal screws.
   4. Conductors for Control Circuits: Use crimped terminals for all connections.
E. Twist-on Insulated Spring Connectors: Rated 600 V, 221 degrees F for standard applications and 302 degrees F for high temperature applications; pre-filled with sealant and listed as complying with UL 486D for damp and wet locations.
F. Push-in Wire Connectors: Rated 600 V, 221 degrees F.
G. Mechanical Connectors: Provide bolted type or set-screw type.
H. Compression Connectors: Provide circumferential type or hex type crimp configuration.
I. Crimped Terminals: Nylon-insulated, with insulation grip and terminal configuration suitable for connection to be made.

2.8 ACCESSORIES

A. Electrical Tape:

1. Vinyl Color Coding Electrical Tape: Integrally colored to match color code indicated; listed as complying with UL 510; minimum thickness of 7 mil; resistant to abrasion, corrosion, and sunlight; suitable for continuous temperature environment up to 221 degrees F.
2. Vinyl Insulating Electrical Tape: Complying with ASTM D3005 and listed as complying with UL 510; minimum thickness of 7 mil; resistant to abrasion, corrosion, and sunlight; conformable for application down to 0 degrees F and suitable for continuous temperature environment up to 221 degrees F.
3. Rubber Splicing Electrical Tape: Ethylene Propylene Rubber (EPR) tape, complying with ASTM D4388; minimum thickness of 30 mil; suitable for continuous temperature environment up to 194 degrees F and short-term 266 degrees F overload service.
4. Electrical Filler Tape: Rubber-based insulating moldable putty, minimum thickness of 125 mil; suitable for continuous temperature environment up to 176 degrees F.
5. Moisture Sealing Electrical Tape: Insulating mastic compound laminated to flexible, all-weather vinyl backing; minimum thickness of 90 mil.

B. Heat Shrink Tubing: Heavy-wall, split-resistant, with factory-applied adhesive; rated 600 V; suitable for direct burial applications; listed as complying with UL 486D.
C. Oxide Inhibiting Compound: Listed; suitable for use with the conductors or cables to be installed.
D. Wire Pulling Lubricant:
   1. Listed and labeled as complying with UL 267.
   2. Suitable for use with conductors/cables and associated insulation/jackets to be installed.
   3. Suitable for use at installation temperature.
E. Cable Ties: Material and tensile strength rating suitable for application.
F. Firestop Sleeves: Listed; provide as required to preserve fire resistance rating of building elements.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that interior of building has been protected from weather.
B. Verify that work likely to damage wire and cable has been completed.
C. Verify that raceways, boxes, and equipment enclosures are installed and are properly sized to accommodate conductors and cables in accordance with NFPA 70.
D. Verify that field measurements are as indicated.
E. Verify that conditions are satisfactory for installation prior to starting work.

3.2 INSTALLATION

A. Circuiting Requirements:
   1. Unless dimensioned, circuit routing indicated is diagrammatic.
   2. When circuit destination is indicated without specific routing, determine exact routing required.
B. Install products in accordance with manufacturer's instructions.
C. Perform work in accordance with NECA 1 (general workmanship).
D. Install nonmetallic-sheathed cable (Type NM-B) in accordance with NECA 121.
E. Install underground feeder and branch-circuit cable (Type UF-B) in accordance with NECA 121.
F. Install metal-clad cable (Type MC) in accordance with NECA 120.
G. Installation in Raceway:
   1. Tape ends of conductors and cables to prevent infiltration of moisture and other contaminants.
   2. Pull all conductors and cables together into raceway at same time.

3. Do not damage conductors and cables or exceed manufacturer's recommended maximum pulling tension and sidewall pressure.
4. Use suitable wire pulling lubricant where necessary, except when lubricant is not recommended by the manufacturer.

H. Secure and support conductors and cables in accordance with NFPA 70 using suitable supports and methods approved by the authority having jurisdiction. Provide independent support from building structure. Do not provide support from raceways, piping, ductwork, or other systems.

I. Terminate cables using suitable fittings.
1. Metal-Clad Cable (Type MC):
a. Use listed fittings.
b. Cut cable armor only using specialized tools to prevent damaging conductors or insulation. Do not use hacksaw or wire cutters to cut armor.

J. Neatly train and bundle conductors inside boxes, wireways, panelboards and other equipment enclosures.

K. Group or otherwise identify neutral/grounded conductors with associated ungrounded conductors inside enclosures in accordance with NFPA 70.

L. Make wiring connections using specified wiring connectors.
1. Make splices and taps only in accessible boxes. Do not pull splices into raceways or make splices in conduit bodies or wiring gutters.
2. Remove appropriate amount of conductor insulation for making connections without cutting, nicking or damaging conductors.
3. Do not remove conductor strands to facilitate insertion into connector.
4. Clean contact surfaces on conductors and connectors to suitable remove corrosion, oxides, and other contaminates. Do not use wire brush on plated connector surfaces.
5. Mechanical Connectors: Secure connections according to manufacturer's recommended torque settings.
6. Compression Connectors: Secure connections using manufacturer's recommended tools and dies.

M. Insulate splices and taps that are made with uninsulated connectors using methods suitable for the application, with insulation and mechanical strength at least equivalent to unspliced conductors.
1. Dry Locations: Use insulating covers specifically designed for the connectors, electrical tape, or heat shrink tubing.
a. For taped connections, first apply adequate amount of rubber splicing electrical tape or electrical filler tape, followed by outer covering of vinyl insulating electrical tape.
2. Damp Locations: Use insulating covers specifically designed for the connectors, electrical tape, or heat shrink tubing.
a. For connections with insulating covers, apply outer covering of moisture sealing electrical tape.
b. For taped connections, follow same procedure as for dry locations but apply outer covering of moisture sealing electrical tape.
3. Wet Locations: Use heat shrink tubing.

N. Insulate ends of spare conductors using vinyl insulating electrical tape.

O. Install firestopping to preserve fire resistance rating of partitions.

P. Unless specifically indicated to be excluded, provide final connections to all equipment and devices, including those furnished by others, as required for a complete operating system.

END OF SECTION

SECTION 26 0526
GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.1 SECTION INCLUDES
A. Grounding and bonding requirements.
B. Conductors for grounding and bonding.
C. Connectors for grounding and bonding.
D. Ground bars.

1.2 RELATED REQUIREMENTS
A. Section 26 0519 - Low-Voltage Electrical Power Conductors and Cables: Additional requirements for conductors for grounding and bonding, including conductor color coding.

1.3 REFERENCE STANDARDS
A. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2015.
B. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
C. UL 467 - Grounding and Bonding Equipment; Current Edition, Including All Revisions.

PART 2 PRODUCTS

2.1 GROUNDING AND BONDING REQUIREMENTS
A. Existing Work: Where existing grounding and bonding system components are indicated to be reused, they may be reused only where they are free from corrosion, integrity and continuity are verified, and where acceptable to the authority having jurisdiction.
B. Do not use products for applications other than as permitted by NFPA 70 and product listing.
C. Unless specifically indicated to be excluded, provide all required components, conductors, connectors, conduit, boxes, fittings, supports, accessories, etc. as necessary for a complete grounding and bonding system.
D. Where conductor size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.
E. Bonding and Equipment Grounding:
    1. Provide bonding for equipment grounding conductors, equipment ground busses, metallic equipment enclosures, metallic raceways and boxes, device grounding terminals, and other normally non-current-carrying conductive materials enclosing electrical conductors/equipment or likely to become energized as indicated and in accordance with NFPA 70.
    2. Provide insulated equipment grounding conductor in each feeder and branch circuit raceway. Do not use raceways as sole equipment grounding conductor.
    3. Where circuit conductor sizes are increased for voltage drop, increase size of equipment grounding conductor proportionally in accordance with NFPA 70.
    4. Unless otherwise indicated, connect wiring device grounding terminal to branch circuit equipment grounding conductor and to outlet box with bonding jumper.
    5. Terminate branch circuit equipment grounding conductors on solidly bonded equipment ground bus only. Do not terminate on neutral (grounded) or isolated/insulated ground bus.
    6. Provide bonding jumper across expansion or expansion/deflection fittings provided to accommodate conduit movement.
F. Communications Systems Grounding and Bonding:
    1. Provide bonding jumper in raceway from intersystem bonding termination to each communications room or backboard and provide ground bar for termination.
        a. Bonding Jumper Size: 6 AWG, unless otherwise indicated or required.

b. Raceway Size: 3/4 inch trade size unless otherwise indicated or required.
c. Ground Bar Size: 1/4 by 2 by 12 inches unless otherwise indicated or required.

2.2 GROUNDING AND BONDING COMPONENTS

A. General Requirements:
1. Provide products listed, classified, and labeled as suitable for the purpose intended.
2. Provide products listed and labeled as complying with UL 467 where applicable.

B. Conductors for Grounding and Bonding, in Addition to Requirements of Section 26 0526:
1. Use insulated copper conductors unless otherwise indicated.
a. Exceptions:
1) Use bare copper conductors where installed underground in direct contact with earth.
2) Use bare copper conductors where directly encased in concrete (not in raceway).

C. Connectors for Grounding and Bonding:
1. Description: Connectors appropriate for the application and suitable for the conductors and items to be connected; listed and labeled as complying with UL 467.
2. Unless otherwise indicated, use mechanical connectors for accessible connections.

D. Ground Bars:
1. Description: Copper rectangular ground bars with mounting brackets and insulators.
2. Size: As indicated.
3. Holes for Connections: As indicated or as required for connections to be made.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that work likely to damage grounding and bonding system components has been completed.
B. Verify that field measurements are as indicated.
C. Verify that conditions are satisfactory for installation prior to starting work.

3.2 INSTALLATION

A. Install products in accordance with manufacturer's instructions.
B. Perform work in accordance with NECA 1 (general workmanship).
C. Make grounding and bonding connections using specified connectors.
1. Remove appropriate amount of conductor insulation for making connections without cutting, nicking or damaging conductors. Do not remove conductor strands to facilitate insertion into connector.
2. Remove nonconductive paint, enamel, or similar coating at threads, contact points, and contact surfaces.
3. Exothermic Welds: Make connections using molds and weld material suitable for the items to be connected in accordance with manufacturer's recommendations.
4. Mechanical Connectors: Secure connections according to manufacturer's recommended torque settings.
5. Compression Connectors: Secure connections using manufacturer's recommended tools and dies.

D. Identify grounding and bonding system components in accordance with Section 26 0553.

END OF SECTION

SECTION 26 0529
HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.1 SECTION INCLUDES
A. Support and attachment requirements and components for equipment, conduit, cable, boxes, and other electrical work.

1.2 RELATED REQUIREMENTS
A. Section 26 0533.13 - Conduit for Electrical Systems: Additional support and attachment requirements for conduits.
B. Section 26 0533.16 - Boxes for Electrical Systems: Additional support and attachment requirements for boxes.
C. Section 27 0529 - Hangers and Supports for Communications Systems.

1.3 REFERENCE STANDARDS
A. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products; 2017.
B. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2016a.
C. ASTM B633 - Standard Specification for Electrodeposited Coatings of Zinc on Iron and Steel; 2019.
D. MFMA-4 - Metal Framing Standards Publication; 2004.
E. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2015.
F. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

PART 2 PRODUCTS

2.1 SUPPORT AND ATTACHMENT COMPONENTS
A. General Requirements:
   1. Comply with the following. Where requirements differ, comply with most stringent.
      a. NFPA 70.
      b. Applicable building code.
      c. Requirements of authorities having jurisdiction.
   2. Provide required hangers, supports, anchors, fasteners, fittings, accessories, and hardware as necessary for complete installation of electrical work.
   3. Provide products listed, classified, and labeled as suitable for purpose intended, where applicable.
   4. Do not use products for applications other than as permitted by NFPA 70 and product listing.
   5. Steel Components: Use corrosion-resistant materials suitable for environment where installed.
      a. Zinc-Plated Steel: Electroplated in accordance with ASTM B633.
      b. Galvanized Steel: Hot-dip galvanized after fabrication in accordance with ASTM A123/A123M or ASTM A153/A153M.
B. Conduit and Cable Supports: Straps and clamps suitable for conduit or cable to be supported.
   1. Conduit Straps: One-hole or two-hole type; steel or malleable iron.
   2. Conduit Clamps: Bolted type unless otherwise indicated.
C. Metal Channel/Strut Framing Systems:
D. Hanger Rods: Threaded, zinc-plated steel unless otherwise indicated.
   1. Minimum Size, Unless Otherwise Indicated or Required:

a. Single Conduit up to 1-inch (27 mm) Trade Size: 1/4-inch diameter.

E. Anchors and Fasteners:
1. Unless otherwise indicated and where not otherwise restricted, use anchor and fastener types indicated for specified applications.
2. Concrete: Use preset concrete inserts, expansion anchors, or screw anchors.
3. Solid or Grout-Filled Masonry: Use expansion anchors or screw anchors.
4. Preset Concrete Inserts: Continuous metal channel/strut and spot inserts specifically designed to be cast in concrete ceilings, walls, and floors.
a. Manufacturer: Same as manufacturer of metal channel/strut framing system.
b. Comply with MFMA-4.
c. Channel Material: Use galvanized steel.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that field measurements are as indicated.
B. Verify that mounting surfaces are ready to receive support and attachment components.
C. Verify that conditions are satisfactory for installation prior to starting work.

3.2 INSTALLATION

A. Install products in accordance with manufacturer's instructions.
B. Install hangers and supports in accordance with NECA 1.
C. Provide independent support from building structure. Do not provide support from piping, ductwork, or other systems.
D. Unless specifically indicated or approved by Engineer, do not provide support from suspended ceiling support system or ceiling grid.
E. Unless specifically indicated or approved by Engineer, do not provide support from roof deck.
F. Do not penetrate or otherwise notch or cut structural members without approval of Structural Engineer.
G. Equipment Support and Attachment:
1. Use metal, fabricated supports or supports assembled from metal channel/strut to support equipment as required.
2. Use metal channel/strut secured to studs to support equipment surface mounted on hollow stud walls when wall strength is not sufficient to resist pull-out.
3. Use metal channel/strut to support surface-mounted equipment in wet or damp locations to provide space between equipment and mounting surface.
4. Securely fasten floor-mounted equipment. Do not install equipment such that it relies on its own weight for support.
H. Preset Concrete Inserts: Use manufacturer provided closure strips to inhibit concrete seepage during concrete pour.
I. Secure fasteners in accordance with manufacturer's recommended torque settings.
J. Remove temporary supports.

END OF SECTION

SECTION 26 0533.13
CONDUIT FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.1 SECTION INCLUDES
A. Galvanized steel electrical metallic tubing (EMT).
B. Stainless steel electrical metallic tubing (EMT).
C. Rigid polyvinyl chloride (PVC) conduit.
D. High-density polyethylene (HDPE) conduit.

1.2 RELATED REQUIREMENTS
A. Section 26 0526 - Grounding and Bonding for Electrical Systems.
B. Section 26 0529 - Hangers and Supports for Electrical Systems.
C. Section 31 2300 - Excavation and Fill: Excavating, bedding, and backfilling.

1.3 REFERENCE STANDARDS
A. ANSI C80.3 - American National Standard for Electrical Metallic Tubing -- Steel (EMT-S); 2020.
B. ASTM F2160 - Standard Specification for Solid Wall High Density Polyethylene (HDPE) Conduit Based on Controlled Outside Diameter (OD); 2016.
C. ASTM F2176 - Standard Specification for Mechanical Couplings Used on Polyethylene Conduit, Duct and Innerduct; 2017.
D. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2015.
E. NEMA FB 1 - Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit, Electrical Metallic Tubing, and Cable; 2014.
F. NEMA TC 2 - Electrical Polyvinyl Chloride (PVC) Conduit; 2020.
G. NEMA TC 3 - Polyvinyl Chloride (PVC) Fittings for Use with Rigid PVC Conduit and Tubing; 2021.
H. NEMA TC 7 - Solid-Wall Coilable and Straight Electrical Polyethylene Conduit; 2021.
I. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
J. UL 6 - Electrical Rigid Metal Conduit-Steel; Current Edition, Including All Revisions.
K. UL 514B - Conduit, Tubing, and Cable Fittings; Current Edition, Including All Revisions.
L. UL 651 - Schedule 40, 80, Type EB and A Rigid PVC Conduit and Fittings; Current Edition, Including All Revisions.
M. UL 651A - Schedule 40 and 80 High Density Polyethylene (HDPE) Conduit; Current Edition, Including All Revisions.
N. UL 797 - Electrical Metallic Tubing-Steel; Current Edition, Including All Revisions.
O. UL 797A - Electrical Metallic Tubing - Aluminum and Stainless Steel; Current Edition, Including All Revisions.

1.4 ADMINISTRATIVE REQUIREMENTS
A. Coordination:
   1. Coordinate minimum sizes of conduits with actual type and quantity of conductors to be installed, including adjustments for conductor sizes increased for voltage drop.
   2. Coordinate arrangement of conduits with structural members, ductwork, piping, equipment, and other potential conflicts.
   3. Verify exact conduit termination locations required for boxes, enclosures, and equipment.
   4. Coordinate work to provide roof penetrations that preserve integrity of roofing system and do not void roof warranty.
   5. Notify Engineer of conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.
B. Sequencing:

1. Do not begin installation of conductors and cables until installation of conduit between termination points is complete.

PART 2 PRODUCTS

2.1 CONDUIT APPLICATIONS

A. Do not use conduit and associated fittings for applications other than as permitted by NFPA 70, manufacturer's instructions, and product listing.
B. Unless otherwise indicated and where not otherwise restricted, use conduit types indicated for specified applications. Where more than one listed application applies, comply with most restrictive requirements. Where conduit type for particular application is not specified, use galvanized steel rigid metal conduit.
C. Underground:
   1. Exterior, Direct-Buried: Use rigid PVC conduit or high-density polyethylene (HDPE) conduit.
   2. Where rigid polyvinyl chloride (PVC) conduit or high-density polyethylene (HDPE) conduit is provided, transition to PVC-coated galvanized steel rigid metal conduit (RMC) where emerging from underground.
D. Concealed Above Accessible Ceilings: Use stainless steel electrical metallic tubing (EMT).
E. Interior, Damp or Wet Locations: Use galvanized steel rigid metal conduit (RMC), stainless steel rigid metal conduit (RMC), or galvanized steel electrical metallic tubing (EMT).
F. Exposed, Interior, Not Subject to Physical Damage: Use galvanized steel electrical metallic tubing (EMT).
G. Exposed, Interior, Subject to Physical Damage: Use galvanized steel electrical metallic tubing (EMT).
   1. Locations subject to physical damage include, but are not limited to:
      a. Where exposed below 8 feet, except within electrical and communication rooms or closets.
H. Exposed, Exterior, Not Subject to Severe Physical Damage: Use galvanized steel electrical metallic tubing (EMT).
I. Corrosive Locations Above Ground: Use stainless steel electrical metallic tubing (EMT).
   1. Corrosive locations include, but are not limited to:
      a. Wastewater treatment facilities.
J. Hazardous/Classified Locations: Use stainless steel intermediate metal conduit (IMC).
K. Fished in Existing Walls, Where Necessary: Use galvanized steel electrical metallic tubing (EMT).

2.2 CONDUIT - GENERAL REQUIREMENTS

A. Comply with NFPA 70.
B. Provide conduit, fittings, supports, and accessories required for complete raceway system.
C. Provide products listed, classified, and labeled as suitable for purpose intended.
D. Minimum Conduit Size, Unless Otherwise Indicated:
   1. Branch Circuits: 3/4-inch trade size.
E. Where conduit size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.

2.3 GALVANIZED STEEL ELECTRICAL METALLIC TUBING (EMT)

A. Description: NFPA 70, Type EMT galvanized steel electrical metallic tubing complying with ANSI C80.3 and listed and labeled as complying with UL 797.
B. Fittings:
   1. Description: Fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B.
   2. Material: Use steel or malleable iron.

3. Connectors and Couplings: Use compression/gland or set-screw type.
   a. Do not use indenter type connectors and couplings.

2.4 STAINLESS STEEL ELECTRICAL METALLIC TUBING (EMT)

A. Description: NFPA 70, Type EMT stainless steel electrical metallic tubing complying with ANSI C80.3 and listed and labeled as complying with UL 797A.
B. Fittings:
   1. Description: Fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B.
   2. Connectors and Couplings: Use compression/gland or set-screw type.
   3. Damp or Wet Locations, Where Permitted: Use fittings listed for use in wet locations.

2.5 RIGID POLYVINYL CHLORIDE (PVC) CONDUIT

A. Description: NFPA 70, Type PVC rigid polyvinyl chloride conduit complying with NEMA TC 2 and listed and labeled as complying with UL 651; Schedule 40 unless otherwise indicated, Schedule 80 where subject to physical damage; rated for use with conductors rated 90 degrees C.
B. Fittings:
   1. Manufacturer: Same as manufacturer of conduit to be connected.
   2. Description: Fittings complying with NEMA TC 3 and listed and labeled as complying with UL 651; material to match conduit.

2.6 HIGH-DENSITY POLYETHYLENE (HDPE) CONDUIT

A. Description: NFPA 70, Type HDPE high-density polyethylene solid-wall conduit complying with ASTM F2160 and NEMA TC 7; list and label as complying with UL 651A; Schedule 40 unless otherwise indicated.
B. Joining Methods: Approved by HDPE conduit manufacturer.
C. Mechanical Fittings: Comply with ASTM F2176; list and label as complying with UL 651A.

2.7 ACCESSORIES

A. Solvent Cement for PVC Conduit and Fittings: As recommended by manufacturer of conduit and fittings to be installed.
B. Pull Strings: Use nylon or polyester tape with average breaking strength of not less than 1,250 lbf.
C. Foam Conduit Sealant:
   1. Removable, two-part, closed-cell foam, specifically designed for sealing conduit openings against water, moisture, gases, and dust.
   2. Suitable for use with conductors/cables and associated insulation/jackets to be installed.
   3. Rated to hold minimum of 10 ft water head pressure.
D. Sealing Compound for Hazardous/Classified Location Sealing Fittings: Listed for use with particular fittings to be installed.
E. Sealing Systems for Concrete Penetrations:
   1. Sleeves: Provide water stop ring or cement coating that bonds to concrete to prevent water infiltration.
   2. Rate for minimum of 40 psig; suitable for sealing around conduits to be installed.
F. Flashing Panels for Exterior Wall Penetrations: Premanufactured components and accessories as required to preserve integrity of building envelope; suitable for conduits and facade materials to be installed.
G. Firestop Sleeves: Listed; provide as required to preserve fire resistance rating of building elements.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that field measurements are as indicated.
B. Verify that mounting surfaces are ready to receive conduits.
C. Verify that conditions are satisfactory for installation prior to starting work.

3.2 INSTALLATION

A. Install products in accordance with manufacturer's instructions.
B. Install conduit in accordance with NECA 1.
C. Install rigid polyvinyl chloride (PVC) conduit in accordance with NECA 111.
D. Conduit Routing:
    1. Unless dimensioned, conduit routing indicated is diagrammatic.
    2. When conduit destination is indicated without specific routing, determine exact routing required.
    3. Conduits in the following areas may be exposed, unless otherwise indicated:
        a. Electrical rooms.
        b. Mechanical equipment rooms.
    4. Arrange conduit to maintain adequate headroom, clearances, and access.
    5. Arrange conduit to provide no more than equivalent of four 90-degree bends between pull points.
    6. Arrange conduit to prevent moisture traps. Provide drain fittings at low points and at sealing fittings where moisture may collect.
    7. Maintain minimum clearance of 6 inches between conduits and piping for other systems.
    8. Maintain minimum clearance of 12 inches between conduits and hot surfaces. This includes, but is not limited to:
        a. Heaters.
        b. Hot water piping.
        c. Flues.
E. Conduit Support:
    1. Secure and support conduits in accordance with NFPA 70 using suitable supports and methods approved by authorities having jurisdiction; see Section 26 0529.
    2. Provide independent support from building structure. Do not provide support from piping, ductwork, or other systems.
    3. Use conduit strap to support single surface-mounted conduit.
        a. Use clamp back spacer with conduit strap for damp and wet locations to provide space between conduit and mounting surface.
    4. Use conduit clamp to support single conduit from beam clamp or threaded rod.
F. Connections and Terminations:
    1. Use suitable adapters where required to transition from one type of conduit to another.
    2. Provide insulating bushings, insulated throats, or listed metal fittings with smooth, rounded edges at conduit terminations to protect conductors.
    3. Secure joints and connections to provide mechanical strength and electrical continuity.
G. Penetrations:
    1. Do not penetrate or otherwise notch or cut structural members, including footings and grade beams, without approval of Structural Engineer.
    2. Make penetrations perpendicular to surfaces unless otherwise indicated.
    3. Provide sleeves for penetrations as indicated or as required to facilitate installation. Set sleeves flush with exposed surfaces unless otherwise indicated or required.
    4. Conceal bends for conduit risers emerging above ground.

5. Where conduits penetrate waterproof membrane, seal as required to maintain integrity of membrane.
6. Make penetrations for roof-mounted equipment within associated equipment openings and curbs where possible to minimize roofing system penetrations. Where penetrations are necessary, seal as indicated or as required to preserve integrity of roofing system and maintain roof warranty.
7. Install firestopping to preserve fire resistance rating of partitions and other elements.

H. Underground Installation:
1. Provide trenching and backfilling per .
2. Minimum Cover, Unless Otherwise Indicated or Required:
   a. Underground, Exterior: 18 inches.

I. Conduit Movement Provisions: Where conduits are subject to movement, provide expansion and expansion/deflection fittings to prevent damage to enclosed conductors or connected equipment. This includes, but is not limited to:
1. Where conduits cross structural joints intended for expansion, contraction, or deflection.

J. Conduit Sealing:
1. Use foam conduit sealant to prevent entry of moisture and gases. This includes, but is not limited to:
   a. Where conduits enter building from outside.
   b. Where service conduits enter building from underground distribution system.
   c. Where conduits may transport moisture to contact live parts.
2. Where conduits cross barriers between areas of potential substantial temperature differential, use foam conduit sealant at accessible point near penetration to prevent condensation. This includes, but is not limited to:
   a. Where conduits pass from outdoors into conditioned interior spaces.
   b. Where conduits pass from unconditioned interior spaces into conditioned interior spaces.
3. Where conduits cross boundaries of hazardous/classified locations, provide identified/listed sealing fittings or conduit mechanical seals as approved by authorities having jurisdiction; locate as indicated or in accordance with NFPA 70.

K. Provide grounding and bonding; see Section 26 0526.

END OF SECTION

SECTION 26 0533.16
BOXES FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.1 SECTION INCLUDES
A. Outlet and device boxes up to 100 cubic inches, including those used as junction and pull boxes.
B. Cabinets and enclosures, including junction and pull boxes larger than 100 cubic inches.
C. Boxes for hazardous (classified) locations.
D. Underground boxes/enclosures.
E. Accessories.

1.2 RELATED REQUIREMENTS
A. Section 26 0529 - Hangers and Supports for Electrical Systems.

1.3 REFERENCE STANDARDS
A. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2015.
B. NECA 130 - Standard for Installing and Maintaining Wiring Devices; 2016.
C. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum); 2020.
D. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
E. SCTE 77 - Specifications for Underground Enclosure Integrity; 2017.
F. UL 50 - Enclosures for Electrical Equipment, Non-Environmental Considerations; Current Edition, Including All Revisions.
G. UL 50E - Enclosures for Electrical Equipment, Environmental Considerations; Current Edition, Including All Revisions.
H. UL 508A - Industrial Control Panels; Current Edition, Including All Revisions.
I. UL 1203 - Explosion-Proof and Dust-Ignition-Proof Electrical Equipment for Use in Hazardous (Classified) Locations; Current Edition, Including All Revisions.

1.4 ADMINISTRATIVE REQUIREMENTS
A. Coordination:
1. Coordinate the work with other trades to avoid placement of ductwork, piping, equipment, or other potential obstructions within the dedicated equipment spaces and working clearances for electrical equipment required by NFPA 70.
2. Coordinate arrangement of electrical equipment with the dimensions and clearance requirements of the actual equipment to be installed.
3. Coordinate minimum sizes of boxes with the actual installed arrangement of conductors, clamps, support fittings, and devices, calculated according to NFPA 70.
4. Coordinate minimum sizes of pull boxes with the actual installed arrangement of connected conduits, calculated according to NFPA 70.
5. Coordinate the placement of boxes with millwork, furniture, devices, equipment, etc. installed under other sections or by others.
6. Coordinate the work with other trades to preserve insulation integrity.
7. Coordinate the work with other trades to provide walls suitable for installation of flush-mounted boxes where indicated.
8. Notify Engineer of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

1.5 SUBMITTALS
A. Product Data: Provide manufacturer's standard catalog pages and data sheets for cabinets and enclosures, boxes for hazardous (classified) locations, floor boxes, and underground boxes/enclosures.

B. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. Keys for Lockable Enclosures: Two of each different key.

PART 2 PRODUCTS

2.1 BOXES

A. General Requirements:
   1. Do not use boxes and associated accessories for applications other than as permitted by NFPA 70 and product listing.
   2. Provide all boxes, fittings, supports, and accessories required for a complete raceway system and to accommodate devices and equipment to be installed.
   3. Provide products listed, classified, and labeled as suitable for the purpose intended.
   4. Where box size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.
   5. Provide grounding terminals within boxes where equipment grounding conductors terminate.

B. Outlet and Device Boxes Up to 100 cubic inches, Including Those Used as Junction and Pull Boxes:
   1. Use sheet-steel boxes for dry locations unless otherwise indicated or required.
   2. Use cast iron boxes or cast aluminum boxes for damp or wet locations unless otherwise indicated or required; furnish with compatible weatherproof gasketed covers.
   3. Minimum Box Size, Unless Otherwise Indicated:
      a. Wiring Devices (Other Than Communications Systems Outlets): 4 inch square by 1-1/2 inch deep (100 by 38 mm) trade size.
      b. Communications Systems Outlets: 4 inch square by 2-1/8 inch (100 by 54 mm) trade size.
      c. Ceiling Outlets: 4 inch octagonal or square by 1-1/2 inch deep (100 by 38 mm) trade size.
   4. Wall Plates: Comply with Section 26 2726.

C. Cabinets and Enclosures, Including Junction and Pull Boxes Larger Than 100 cubic inches:
   1. Comply with NEMA 250, and list and label as complying with UL 50 and UL 50E, or UL 508A.
   2. NEMA 250 Environment Type, Unless Otherwise Indicated:
      a. Indoor Clean, Dry Locations: Type 1, painted steel.
      b. Outdoor Locations: Type 3R, painted steel.
   3. Junction and Pull Boxes Larger Than 100 cubic inches:
      a. Provide hinged-cover enclosures unless otherwise indicated.
   4. Cabinets and Hinged-Cover Enclosures, Other Than Junction and Pull Boxes:
      a. Provide lockable hinged covers, all locks keyed alike unless otherwise indicated.
      b. Back Panels: Painted steel, removable.
      c. Terminal Blocks: Provide voltage/current ratings and terminal quantity suitable for purpose indicated, with 25 percent spare terminal capacity.
   5. Finish for Painted Steel Enclosures: Manufacturer's standard grey unless otherwise indicated.

D. Boxes for Hazardous (Classified) Locations: Listed and labeled as complying with UL 1203 for the classification of the installed location.

E. Underground Boxes/Enclosures:
   1. Description: In-ground, open bottom boxes furnished with flush, non-skid covers with legend indicating type of service and stainless steel tamper resistant cover bolts.
   2. Size: As indicated on drawings.
   3. Depth: As required to extend below frost line to prevent frost upheaval, but not less than 12 inches.

4. Applications:
   a. Sidewalks and Landscaped Areas Subject Only to Occasional Nondeliberate Vehicular Traffic: Use polymer concrete enclosures, with minimum SCTE 77 Tier 8 load rating.
   b. Do not use polymer concrete enclosures in areas subject to deliberate vehicular traffic.
5. Polymer Concrete Underground Boxes/Enclosures: Comply with SCTE 77.
   a. Combination fiberglass/polymer concrete boxes/enclosures are acceptable.

2.2 ACCESSORIES

A. Flashing Panels for Exterior Wall Penetrations: Premanufactured components and accessories as required to preserve integrity of building envelope; suitable for boxes and facade materials to be installed.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that field measurements are as indicated.
B. Verify that mounting surfaces are ready to receive boxes.
C. Verify that conditions are satisfactory for installation prior to starting work.

3.2 INSTALLATION

A. Install products in accordance with manufacturer's instructions.
B. Install boxes in accordance with NECA 1 (general workmanship) and, where applicable, NECA 130, including mounting heights specified in those standards where mounting heights are not indicated.
C. Arrange equipment to provide minimum clearances in accordance with manufacturer's instructions and NFPA 70.
D. Box Locations:
   1. Locate boxes to be accessible. Provide access panels as required and approved by Owner and Engineer..
   2. Unless dimensioned, box locations indicated are approximate.
   3. Locate boxes so that wall plates do not span different building finishes.
   4. Locate boxes so that wall plates do not cross masonry joints.
   5. Fire Resistance Rated Walls: Install flush-mounted boxes such that the required fire resistance will not be reduced.
   6. Locate junction and pull boxes in the following areas, unless otherwise indicated or approved by Engineer:
      a. Concealed above accessible suspended ceilings.
      b. Within joists in areas with no ceiling.
      c. Electrical rooms.
      d. Mechanical equipment rooms.
E. Box Supports:
   1. Secure and support boxes in accordance with NFPA 70 and Section 26 0529 using suitable supports and methods approved by the authority having jurisdiction.
   2. Provide independent support from building structure except for cast metal boxes (other than boxes used for fixture support) supported by threaded conduit connections in accordance with NFPA 70. Do not provide support from piping, ductwork, or other systems.
F. Install boxes plumb and level.
G. Install boxes as required to preserve insulation integrity.
H. Underground Boxes/Enclosures:
   1. Install enclosure on gravel base, minimum 6 inches deep.

2. Mount enclosures located in landscaped areas with top at 1 inch above finished grade.
3. Install additional bracing inside enclosures in accordance with manufacturer's instructions to minimize box sidewall deflections during backfilling. Backfill with cover bolted in place.

I. Install permanent barrier between ganged wiring devices when voltage between adjacent devices exceeds 300 V.
J. Install firestopping to preserve fire resistance rating of partitions and other elements.
K. Close unused box openings.
L. Install blank wall plates on junction boxes and on outlet boxes with no devices or equipment installed or designated for future use.
M. Provide grounding and bonding in accordance with Section 26 0526.

END OF SECTION

SECTION 26 2726
WIRING DEVICES

PART 1 GENERAL

1.1 SECTION INCLUDES
A. Receptacles.
B. Wall plates.

1.2 RELATED REQUIREMENTS
A. Section 26 0533.16 - Boxes for Electrical Systems.

1.3 REFERENCE STANDARDS
A. FS W-C-596 - Connector, Electrical, Power, General Specification for; 2014h (Validated 2022).
B. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2015.
C. NECA 130 - Standard for Installing and Maintaining Wiring Devices; 2016.
D. NEMA WD 1 - General Color Requirements for Wiring Devices; 1999 (Reaffirmed 2020).
E. NEMA WD 6 - Wiring Devices - Dimensional Specifications; 2021.
F. UL 498 - Attachment Plugs and Receptacles; Current Edition, Including All Revisions.
G. UL 514D - Cover Plates for Flush-Mounted Wiring Devices; Current Edition, Including All Revisions.
H. UL 943 - Ground-Fault Circuit-Interrupters; Current Edition, Including All Revisions.

1.4 ADMINISTRATIVE REQUIREMENTS
A. Coordination:
   1. Coordinate the placement of outlet boxes with millwork, furniture, equipment, etc. installed under other sections or by others.
   2. Coordinate wiring device ratings and configurations with the electrical requirements of actual equipment to be installed.
   3. Coordinate the installation and preparation of uneven surfaces, such as split face block, to provide suitable surface for installation of wiring devices.
   4. Notify Engineer of any conflicts or deviations from Contract Documents to obtain direction prior to proceeding with work.

1.5 SUBMITTALS
A. Product Data: Provide manufacturer's catalog information showing dimensions, colors, and configurations.

PART 2 PRODUCTS

2.1 WIRING DEVICE APPLICATIONS
A. Provide wiring devices suitable for intended use and with ratings adequate for load served.
B. For single receptacles installed on an individual branch circuit, provide receptacle with ampere rating not less than that of the branch circuit.
C. Provide weather resistant GFCI receptacles with specified weatherproof covers for receptacles installed outdoors or in damp or wet locations.
D. Provide GFCI protection for receptacles installed within 6 feet of sinks.

2.2 WIRING DEVICE FINISHES
A. Wiring Devices Installed in Finished Spaces: White with white nylon wall plate.
B. Wiring Devices Installed in Unfinished Spaces: Gray with galvanized steel wall plate.
C. Wiring Devices Installed in Wet or Damp Locations: White with specified weatherproof cover.

2.3 RECEPTACLES

A. Receptacles - General Requirements: Self-grounding, complying with NEMA WD 1 and NEMA WD 6, and listed as complying with UL 498, and where applicable, FS W-C-596; types as indicated on the drawings.
   1. Wiring Provisions: Terminal screws for side wiring or screw actuated binding clamp for back wiring with separate ground terminal screw.
   2. NEMA configurations specified are according to NEMA WD 6.

B. Convenience Receptacles:
   1. Standard Convenience Receptacles: Industrial specification grade, 20A, 125V, NEMA 5-20R; single or duplex as indicated on the drawings.

C. GFCI Receptacles:
   1. GFCI Receptacles - General Requirements: Self-testing, with feed-through protection and light to indicate ground fault tripped condition and loss of protection; listed as complying with UL 943, class A.
   2. Standard GFCI Receptacles: Industrial specification grade, duplex, 20A, 125V, NEMA 5-20R, rectangular decorator style.
   3. Weather Resistant GFCI Receptacles: Industrial specification grade, duplex, 20A, 125V, NEMA 5-20R, rectangular decorator style, listed and labeled as weather resistant type complying with UL 498 Supplement SD suitable for installation in damp or wet locations.

2.4 WALL PLATES

A. Wall Plates: Comply with UL 514D.
   1. Configuration: One piece cover as required for quantity and types of corresponding wiring devices.
   2. Size: Standard.
   3. Screws: Metal with slotted heads finished to match wall plate finish.

B. Nylon Wall Plates: Smooth finish, high-impact thermoplastic.

C. Stainless Steel Wall Plates: Brushed satin finish, Type 302 stainless steel.

D. Galvanized Steel Wall Plates: Rounded corners and edges, with corrosion resistant screws.

PART 3 EXECUTION

3.1 INSTALLATION

A. Perform work in accordance with NECA 1 (general workmanship) and, where applicable, NECA 130, including mounting heights specified in those standards unless otherwise indicated.

B. Coordinate locations of outlet boxes provided under Section 26 0533.16 as required for installation of wiring devices provided under this section.

C. Install wiring devices in accordance with manufacturer's instructions.

D. Install permanent barrier between ganged wiring devices when voltage between adjacent devices exceeds 300 V.

E. Where required, connect wiring devices using pigtails not less than 6 inches long. Do not connect more than one conductor to wiring device terminals.

F. Connect wiring devices by wrapping conductor clockwise 3/4 turn around screw terminal and tightening to proper torque specified by the manufacturer. Where present, do not use push-in pressure terminals that do not rely on screw-actuated binding.

G. Unless otherwise indicated, connect wiring device grounding terminal to branch circuit equipment grounding conductor and to outlet box with bonding jumper.

H. Install wiring devices plumb and level with mounting yoke held rigidly in place.

I. Install wall switches with OFF position down.

J. Install vertically mounted receptacles with grounding pole on top and horizontally mounted receptacles with grounding pole on left.

K. Install wall plates to fit completely flush to wall with no gaps and rough opening completely covered without strain on wall plate. Repair or reinstall improperly installed outlet boxes or improperly sized rough openings. Do not use oversized wall plates in lieu of meeting this requirement.
L. Install blank wall plates on junction boxes and on outlet boxes with no wiring devices installed or designated for future use.

END OF SECTION

SECTION 27 0526
GROUNDING AND BONDING FOR COMMUNICATIONS SYSTEMS

PART 1 – GENERAL

1.1 WORK INCLUDED
A. Provide all labor, materials, and equipment for the complete installation of work called for in the Contract Documents.

1.2 SCOPE OF WORK
A. This section includes the minimum requirements for the equipment and cable installations in communications equipment rooms (Telecommunications Closets).
B. Included in this section are the minimum composition requirements and installation methods for the following:
   1. Busbars
   2. Bonding accessories

1.3 QUALITY ASSURANCE
A. All cable and equipment shall be installed in a neat and workmanlike manner. All methods of construction that are not specifically described or indicated in the contract documents shall be subject to the control and approval of the Owner or Owner Representative. Equipment and materials shall be of the quality and manufacture indicated. The equipment specified is based upon the acceptable manufactures listed. Where “approved equal” is stated, equipment shall be equivalent in every way to that of the equipment specified and subject to approval.
B. Strictly adhere to all Building Industry Consulting Service International (BICSI), Electronic Industries Alliance (EIA) and Telecommunications Industry Association (TIA) recommended installation practices when installing communications/data cabling.
C. Material and work specified herein shall comply with the applicable requirements of the following standards and the Authority Having Jurisdiction (AHJ).
   1. ANSI/TIA/EIA – 568 Commercial Building Telecommunications Cabling Standard
   2. TIA – 569 Commercial Building Standard for Telecommunications Pathways and Spaces
   3. ANSI/TIA/EIA – 606 Administration Standard for the Telecommunications Infrastructure of Commercial Buildings
   4. ANSI-J-STD – 607 Joint Standard for Commercial Building Grounding (Earthing) and Bonding Requirements for Telecommunications
   5. NFPA 70 – National Electric Code
   6. BICSI – Telecommunications Distribution Methods Manual, 11th Edition,

1.4 SUBMITTALS
A. Provide product data for the following:
B. Manufacturers cut sheets, specifications and installation instructions for all products (submit with bid).

1.5 PART 2 - PRODUCTS
A. RACK-MOUNT BUSBAR
   1. Horizontal Rack Busbar
      a. Horizontal rack-mount busbar shall be constructed of 3/16” thick by 3/4”H hard-drawn electrolytic tough pitch 110 alloy copper bar.
      b. Bar shall be 19” EIA or 23” rack mounting width (as specified below) for mounting on relay racks or in cabinets.
      c. Bar shall have eight 6-32 tapped ground mounting holes on 1” intervals and four 0.281” holes for the attachment of two-hole grounding lugs.

d. Each bar shall include a copper splice bar of the same material (to transition between adjoining racks) and two each 12-24 x ¾" copper-plated steel screws and flat washers for attachment to the rack or cabinet.
e. Bar shall be UL Listed as grounding and bonding equipment.

B. BONDING ACCESSORIES
1. Two Mounting Hole Ground Terminal Block
a. Ground terminal block shall be made of electroplated tin aluminum extrusion.
b. Ground terminal block shall accept conductors ranging from #14 AWG through 2/0.
c. The conductors shall be held in place by two stainless steel set screws.
d. Ground terminal block shall have two 1/4" holes spaced on 5/8" centers to allow secure two-bolt attachment to the rack or cabinet.
e. Ground terminal block shall be UL Listed as a wire connector.
2. Compression Lugs
a. Compression lugs shall be manufactured from electroplated tinned copper.
b. Compression lugs shall have two holes spaced on 5/8" or 1" centers, as stated below, to allow secure two bolt connections to busbars.
c. Compression lugs shall be sized to fit a specific size conductor, sizes #6 to 4/0, as stated below.
d. Compression lugs shall be UL Listed as wire connectors.
3. Antioxidant Joint Compound
a. Oxide inhibiting joint compound for copper-to-copper, aluminum-to-aluminum or aluminum-to-copper connections.
4. C-Type, Compression Taps
a. Compression taps shall be manufactured from copper alloy.
b. Compression taps shall be C-shaped connectors that wrap around two conductors forming an irreversible splice around the conductors; installation requires a hydraulic crimping tool
c. Compression taps shall be sized to fit specific size conductors, sizes #2 AWG to 4/0, as stated below.
d. Compression taps shall be UL Listed.
5. Pedestal Clamp With Grounding Connector
a. Pedestal clamp shall be made from electroplated tinned copper or bronze. Installation hardware will be stainless steel.
b. Pedestal clamps shall be sized to fit a specific size conductor, size #6 and/or 2/0, as stated below.
c. Pedestal clamp installation hardware shall be sized to attach to round and/or square raised access floor pedestals that are 1-1/8" to 1-3/4" in diameter, as stated below.
d. Pedestal clamp shall provide straight (in-line) or cross (intersection) support for up to two conductors.
e. Pedestal clamp shall be UL Listed as grounding and bonding equipment.
6. Pipe Clamp With Grounding Connector
a. Pipe clamp shall be made from electroplated tinned bronze. Installation hardware will be stainless steel.
b. Pipe clamp shall be sized to fit up to two conductors ranging in size from #6 to 250 MCM; conductors must be the same size.
c. Pipe clamp installation hardware shall be sized to attach to pipes, sizes 1" to 6" (.75" to 6.63" in diameter), as stated below.
d. Pipe clamp shall be UL Listed as grounding and bonding equipment.
7. Equipment Ground Jumper Kit
a. Kit includes one 24"L insulated ground jumper with a straight two hole compression lug on one end and an L-shaped two hole compression lug on the other end, two

plated installation screws, an abrasive pad and a .5 once tube of antioxidant joint compound.

b. Ground conductor is an insulated green/yellow stripe #6 AWG wire
c. Lugs are made from electroplated tinned copper and have two mounting holes spaces .5" to .625" apart that accept 1/4" screws.
d. Jumper will be made with UL Listed components

PART 3 – EXECUTION

2.1 INSTALLATION

A. Rack-Mount Busbars and Ground Bars
   1. When a rack or cabinet supports active equipment or any type of shielded cable or cable termination device requiring a ground connection, add a rack-mount horizontal or vertical busbar or ground bar to the rack or cabinet. The rack-mount busbar or ground bar provides multiple bonding points on the rack for rack and rack-mount equipment.
   2. Attach rack-mount busbars and ground bars to racks or cabinets according to the manufacturer's installation instructions.
   3. Bond the rack-mount busbar or ground bar to the room's TMGB or TGB with appropriately sized hardware and conductor.

B. Ground Terminal Block
   1. Every rack and cabinet shall be bonded to the TMGB or TGB.
   2. Minimum bonding connection to racks and cabinets shall be made with a rack-mount two-hole ground terminal block sized to fit the conductor and rack and installed according to manufacturer recommendations.
   3. Remove paint between rack/cabinet and terminal block, clean surface and use antioxidant between the rack and the terminal block to help prevent corrosion at the bond.

C. Pedestal Clamp
   1. At minimum, bond every sixth raised access floor pedestal with a minimum #6 AWG conductor to the TMGB or TGB using a pedestal clamp sized to fit the pedestal and the conductor and installed according to the manufacturer's recommendations.
   2. If pedestal clamps are used to construct a signal reference grid, bond the signal reference grid to the TMGB or TGB and bond each rack and/or cabinet to the signal reference grid using a compression tap or similar non-reversible bonding component sized to fit both conductors.
   3. Remove paint between the pedestal and pedestal clamp, clean surface and use antioxidant between the pedestal and the clamp to help prevent corrosion at the bond.
   4. Remove insulation from conductors where wires attach to the pedestal clamp.

D. Pipe Clamp
   1. Bond metal pipes located inside the data center computer room with a minimum #6 AWG conductor to the TMGB or TGB using a pipe clamp sized to fit the pipe and the conductor and installed according to the manufacturer's recommendations.
   2. Remove paint between the pipe and pipe clamp, clean surface and use antioxidant between the pipe and the clamp to help prevent corrosion at the bond.
   3. Remove insulation from conductors where wires attach to the pipe clamp.

E. Equipment Ground Jumper Kit
   1. Bond equipment to a vertical rack-mount busbar or groundbar using ground jumper according to the manufacturer's recommendations.
   2. Clean the surface and use antioxidant between the compression lugs on the jumper and the rack-mount busbar or groundbar to help prevent corrosion at the bond.

END OF SECTION

SECTION 27 0529
HANGERS AND SUPPORTS FOR COMMUNICATIONS SYSTEMS

PART 1 GENERAL

1.1 SECTION INCLUDES
A. Support and attachment requirements and components for equipment, conduit, cable, boxes, and other communications work.

1.2 RELATED REQUIREMENTS
A. Section 27 0533.13 - Conduit for Communications Systems: Additional support and attachment requirements for conduits.
B. Section 27 1000 - Structured Cabling.

1.3 ADMINISTRATIVE REQUIREMENTS
A. Coordination:
1. Coordinate sizes and arrangement of supports and bases with actual equipment and components to be installed.
2. Coordinate work to provide additional framing and materials required for installation.
3. Coordinate compatibility of support and attachment components with mounting surfaces at installed locations.
4. Coordinate arrangement of supports with ductwork, piping, equipment and other potential conflicts.
5. Notify Engineer of conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

PART 2 PRODUCTS

2.1 SUPPORT AND ATTACHMENT COMPONENTS
A. General Requirements:
1. Comply with the following. Where requirements differ, comply with most stringent.
a. TIA-569.
b. NFPA 70.
c. Requirements of authorities having jurisdiction.
2. Provide required hangers, supports, anchors, fasteners, fittings, accessories, and hardware as necessary for complete installation of communications work.
3. Provide products listed, classified, and labeled as suitable for purpose intended, where applicable.
4. Where support and attachment component types and sizes are not indicated, select in accordance with manufacturer's application criteria as required for load to be supported. Include consideration for vibration, equipment operation, and shock loads where applicable.
5. Do not use products for applications other than as permitted by NFPA 70 and product listing.
6. Steel Components: Use corrosion-resistant materials suitable for environment where installed.
a. Zinc-Plated Steel: Electroplated in accordance with ASTM B633.
b. Galvanized Steel: Hot-dip galvanized after fabrication in accordance with ASTM A123/A123M or ASTM A153/A153M.
B. Conduit Supports: Straps and clamps suitable for conduit to be supported.
1. Conduit Straps: One-hole or two-hole type; steel or malleable iron.
2. Conduit Clamps: Bolted type unless otherwise indicated.

C. Cable Supports: Suitable for cables to be supported, including but not limited to J-hooks, bridle rings, drive rings, and flexible harnesses/slings.
   1. Applications:
      a. Do not exceed 5 feet between cable supports.
      b. Maximum Number of Cables per Cable Support:
      c. Allowable Cable Types:
         1) J-Hooks: Category 3, Category 5e, and Category 6.
         2) Bridle Rings with Saddle: Category 3, Category 5e, and Category 6.
   2. J-Hooks: Noncontinuous cabling support with removable top retainer clip.
      a. Provide support surfaces with smooth, beveled edges and radius not less than minimum allowable bend radius of cables supported.
      b. Provide multitiered J-hooks where required to support multiple cabling systems.
   3. Bridle rings: Noncontinuous circular cabling support.
      a. Material: Use galvanized steel.
      b. Provide integral saddle with smooth, beveled edges and radius not less than minimum allowable bend radius of cables supported where indicated.
D. Outlet Box Supports: Hangers and brackets suitable for boxes to be supported.
E. Metal Channel/Strut Framing Systems:
   1. Description: Factory-fabricated, continuous-slot, metal channel/strut and associated fittings, accessories, and hardware required for field assembly of supports.
   2. Comply with MFMA-4.
F. Hanger Rods: Threaded, zinc-plated steel unless otherwise indicated.
G. Anchors and Fasteners:
   1. Unless otherwise indicated and where not otherwise restricted, use anchor and fastener types indicated for specified applications.

PART 3 EXECUTION

3.1 INSTALLATION

A. Install products in accordance with manufacturer's instructions.
B. Install hangers and supports in accordance with NECA 1, BICSI ITSIMM, and BICSI N1.
C. Install anchors and fasteners in accordance with ICC Evaluation Services, LLC (ICC-ES) evaluation report conditions of use where applicable.
D. Provide independent support from building structure. Do not provide support from piping, ductwork, or other systems.
E. Unless specifically indicated or approved by Engineer, do not provide support from suspended ceiling support system or ceiling grid.
F. Unless specifically indicated or approved by Engineer, do not provide support from roof deck.
G. Do not penetrate or otherwise notch or cut structural members without approval of Structural Engineer.
H. Equipment Support and Attachment:
   1. Use metal, fabricated supports or supports assembled from metal channel/strut to support equipment as required.
   2. Use metal channel/strut secured to studs to support equipment surface mounted on hollow stud walls when wall strength is not sufficient to resist pull-out.
   3. Use metal channel/strut to support surface-mounted equipment in wet or damp locations to provide space between equipment and mounting surface.
   4. Securely fasten floor-mounted equipment. Do not install equipment such that it relies on its own weight for support.

3.2 FIELD QUALITY CONTROL

A. Correct deficiencies and replace damaged or defective support and attachment components.

END OF SECTION

SECTION 27 0533.13
CONDUIT FOR COMMUNICATIONS SYSTEMS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Galvanized steel rigid metal conduit (RMC).
B. Stainless steel rigid metal conduit (RMC).
C. Flexible metal conduit (FMC).
D. Galvanized steel electrical metallic tubing (EMT).
E. Stainless steel electrical metallic tubing (EMT).
F. Aluminum electrical metallic tubing (EMT).
G. Rigid polyvinyl chloride (PVC) conduit.
H. Reinforced thermosetting resin conduit (RTRC).
I. High-density polyethylene (HDPE) conduit.
J. Inside-plant flexible nonmetallic communications raceway/innerduct.

1.2 RELATED REQUIREMENTS

A. Section 31 2300 - Excavation and Fill: Excavating, bedding, and backfilling.

1.3 REFERENCE STANDARDS

A. ANSI C80.1 - American National Standard for Electrical Rigid Steel Conduit (ERSC); 2020.
B. ANSI C80.3 - American National Standard for Electrical Metallic Tubing -- Steel (EMT-S); 2020.
C. ASTM F2160 - Standard Specification for Solid Wall High Density Polyethylene (HDPE) Conduit Based on Controlled Outside Diameter (OD); 2016.
D. ASTM F2176 - Standard Specification for Mechanical Couplings Used on Polyethylene Conduit, Duct and Innerduct; 2017.
E. BICSI ITSIMM - Information Technology Systems Installation Methods Manual (ITSIMM), 8th Edition; 2022.
F. BICSI N1 - Installation Practices for Telecommunications and ICT Cabling and Related Cabling Infrastructure, 1st Edition; 2019.
G. BICSI TDMM - Telecommunications Distribution Methods Manual, 14th Edition; 2020.
H. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2015.
I. NECA 101 - Standard for Installing Steel Conduits (Rigid, IMC, EMT); 2020.
J. NECA 111 - Standard for Installing Nonmetallic Raceways (RNC, ENT, LFNC); 2017.
K. NEMA FB 1 - Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit, Electrical Metallic Tubing, and Cable; 2014.
L. NEMA TC 2 - Electrical Polyvinyl Chloride (PVC) Conduit; 2020.
M. NEMA TC 3 - Polyvinyl Chloride (PVC) Fittings for Use with Rigid PVC Conduit and Tubing; 2021.
N. NEMA TC 7 - Solid-Wall Coilable and Straight Electrical Polyethylene Conduit; 2021.
O. NEMA TC 14 (SERIES) - Reinforced Thermosetting Resin Conduit and Fittings Series; 2015.
P. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
Q. TIA-568.0 - Generic Telecommunications Cabling for Customer Premises; 2020e.
R. TIA-569 - Telecommunications Pathways and Spaces; 2019e, with Addendum (2022).
S. UL 1 - Flexible Metal Conduit; Current Edition, Including All Revisions.
T. UL 6 - Electrical Rigid Metal Conduit-Steel; Current Edition, Including All Revisions.
U. UL 6A - Electrical Rigid Metal Conduit-Aluminum, Red Brass, and Stainless Steel; Current Edition, Including All Revisions.
V. UL 514B - Conduit, Tubing, and Cable Fittings; Current Edition, Including All Revisions.

W. UL 651 - Schedule 40, 80, Type EB and A Rigid PVC Conduit and Fittings; Current Edition, Including All Revisions.
X. UL 651A - Schedule 40 and 80 High Density Polyethylene (HDPE) Conduit; Current Edition, Including All Revisions.
Y. UL 746C - Polymeric Materials – Use in Electrical Equipment Evaluations; Current Edition, Including All Revisions.
Z. UL 797 - Electrical Metallic Tubing-Steel; Current Edition, Including All Revisions.
AA. UL 797A - Electrical Metallic Tubing - Aluminum and Stainless Steel; Current Edition, Including All Revisions.
BB. UL 2024 - Standard for Cable Routing Assemblies and Communications Raceways; Current Edition, Including All Revisions.
CC. UL 2419 - Outline of Investigation for Electrically Conductive Corrosion Resistant Compounds; Current Edition, Including All Revisions.

1.4 ADMINISTRATIVE REQUIREMENTS

A. Coordination:
   1. Coordinate minimum sizes of conduits with actual type and quantity of cables to be installed.
   2. Coordinate arrangement of conduits with structural members, ductwork, piping, equipment and other potential conflicts.
   3. Verify exact conduit termination locations required for boxes, enclosures, and equipment.
   4. Coordinate work to provide roof penetrations that preserve integrity of roofing system and do not void roof warranty.
   5. Notify Engineer of conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.
B. Sequencing:
   1. Do not begin installation of communications cables until installation of conduit between termination points is complete.

1.5 SUBMITTALS

A. Product Data: Provide manufacturer's standard catalog pages and data sheets for conduits and fittings.

PART 2 PRODUCTS

2.1 CONDUIT APPLICATIONS

A. Do not use conduit and associated fittings for applications other than as permitted by NFPA 70, TIA-569, BICSI ITSIMM, BICSI TDMM, manufacturers' instructions, and product listing.
B. Unless otherwise indicated and where not otherwise restricted, use conduit types indicated for specified applications. Where more than one listed application applies, comply with most restrictive requirements. Where conduit type for particular application is not specified, use galvanized steel rigid metal conduit.
C. Underground:
   1. Exterior, Direct-Buried: Use high-density polyethylene (HDPE) conduit.
   2. Where high-density polyethylene (HDPE) conduit is provided, transition to schedule 80 rigid PVC conduit where emerging from underground.
D. Concealed Within Masonry Walls: Use inside-plant flexible nonmetallic communications raceway/innerduct.
E. Concealed Within Hollow Stud Walls: Use inside-plant flexible nonmetallic communications raceway/innerduct.
F. Concealed Above Accessible Ceilings: Use inside-plant flexible nonmetallic communications raceway/innerduct.
G. Interior, Damp or Wet Locations: Use galvanized steel electrical metallic tubing (EMT).

H. Exposed, Interior, Not Subject to Physical Damage: Use inside-plant flexible nonmetallic communications raceway/innerduct.
I. Exposed, Interior, Subject to Physical Damage: Use galvanized steel electrical metallic tubing (EMT).
J. Exposed, Exterior, Not Subject to Severe Physical Damage: Use galvanized steel electrical metallic tubing (EMT).
K. Corrosive Locations Above Ground: Use stainless steel rigid metal conduit (RMC), stainless steel electrical metallic tubing (EMT), or reinforced thermosetting resin conduit (RTRC).
L. Hazardous/Classified Locations: Use stainless steel electrical metallic tubing (EMT).
M. Fished in Existing Walls, Where Necessary: Use inside-plant flexible nonmetallic communications raceway/innerduct.

2.2 CONDUIT - GENERAL REQUIREMENTS

A. Comply with NFPA 70 and TIA-569.
B. Provide conduit, fittings, supports, and accessories required for complete communications pathway.
C. Provide products listed, classified, and labeled as suitable for purpose intended.
D. Where conduit size is not indicated, size to comply with NFPA 70, TIA-569, and BICSI TDMM, but not less than applicable minimum size requirements specified. Where specified standards differ, comply with most stringent.

2.3 GALVANIZED STEEL RIGID METAL CONDUIT (RMC)

A. Description: NFPA 70, Type RMC galvanized steel rigid metal conduit complying with ANSI C80.1 and listed and labeled as complying with UL 6.
B. Fittings:
   1. Nonhazardous Locations: Use fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B or UL 6.
   2. Material: Use steel or malleable iron.
   3. Connectors and Couplings: Use threaded fittings only. Threadless fittings, including set screw and compression/gland types, are not permitted.
   4. Conduit Bodies: Use only conduit bodies specifically designed for communications cabling. Standard conduit bodies designed for electrical raceways are not permitted.
      a. Comply with TIA-568.0 minimum bend radius requirements for fiber optic cables.

2.4 STAINLESS STEEL RIGID METAL CONDUIT (RMC)

A. Description: NFPA 70, Type RMC stainless steel rigid metal conduit complying with ANSI C80.1 and listed and labeled as complying with UL 6A.
B. Fittings:
   1. Nonhazardous Locations: Use fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B or UL 6A.
   2. Material: Use stainless steel with corrosion resistance equivalent to conduit.
   3. Connectors and Couplings: Use threaded fittings only. Threadless fittings, including set screw and compression/gland types, are not permitted.
   4. Conduit Bodies: Standard conduit bodies designed for electrical raceways are not permitted.

2.5 FLEXIBLE METAL CONDUIT (FMC)

A. Description: NFPA 70, Type FMC standard-wall steel flexible metal conduit listed and labeled as complying with UL 1, and listed for use in classified firestop systems.
B. Fittings:
   1. Description: Fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B.
   2. Material: Use steel or malleable iron.

3. Conduit Bodies: Standard conduit bodies designed for electrical raceways are not permitted.

2.6 GALVANIZED STEEL ELECTRICAL METALLIC TUBING (EMT)

A. Description: NFPA 70, Type EMT galvanized steel electrical metallic tubing complying with ANSI C80.3 and listed and labeled as complying with UL 797.

B. Fittings:
   1. Description: Fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B.
   2. Material: Use steel or malleable iron.
   3. Connectors and Couplings: Use compression/gland or set-screw type.
      a. Do not use indenter type connectors and couplings.
   4. Conduit Bodies: Use only conduit bodies specifically designed for communications cabling. Standard conduit bodies designed for electrical raceways are not permitted.
      a. Comply with TIA-568.0 minimum bend radius requirements for fiber optic cables.

2.7 STAINLESS STEEL ELECTRICAL METALLIC TUBING (EMT)

A. Description: NFPA 70, Type EMT stainless steel electrical metallic tubing complying with ANSI C80.3 and listed and labeled as complying with UL 797A.

B. Fittings:
   1. Description: Fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B.
   2. Material: Use stainless steel with corrosion resistance equivalent to conduit.
   3. Connectors and Couplings: Use compression/gland or set-screw type.
   4. Conduit Bodies: Standard conduit bodies designed for electrical raceways are not permitted.

2.8 ALUMINUM ELECTRICAL METALLIC TUBING (EMT)

A. Description: NFPA 70, Type EMT aluminum electrical metallic tubing listed and labeled as complying with UL 797A.

B. Fittings:
   1. Description: Fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B; listed for use with aluminum EMT.
   2. Material: Use aluminum.
   3. Connectors and Couplings: Use compression/gland or set-screw type.
      a. Do not use indenter type connectors and couplings.
   4. Conduit Bodies: Use only conduit bodies specifically designed for communications cabling. Standard conduit bodies designed for electrical raceways are not permitted.
      a. Comply with TIA-568.0 minimum bend radius requirements for fiber optic cables.

2.9 RIGID POLYVINYL CHLORIDE (PVC) CONDUIT

A. Description: NFPA 70, Type PVC rigid polyvinyl chloride conduit complying with NEMA TC 2 and listed and labeled as complying with UL 651; Schedule 40 unless otherwise indicated, Schedule 80 where subject to physical damage.

B. Fittings:
   1. Manufacturer: Same as manufacturer of conduit to be connected.
   2. Description: Fittings complying with NEMA TC 3 and listed and labeled as complying with UL 651; material to match conduit.
   3. Conduit Bodies: Use only conduit bodies specifically designed for communications cabling. Standard conduit bodies designed for electrical raceways are not permitted.
      a. Comply with TIA-568.0 minimum bend radius requirements for fiber optic cables.

2.10 REINFORCED THERMOSETTING RESIN CONDUIT (RTRC)

A. Description: NFPA 70, Type RTRC reinforced thermosetting resin conduit complying with NEMA TC 14 (SERIES).
B. Supports: As recommended by manufacturer.
C. Fittings: Same type and manufacturer as conduit to be connected.
   1. Conduit Bodies: Standard conduit bodies designed for electrical raceways are not permitted.

2.11 HIGH-DENSITY POLYETHYLENE (HDPE) CONDUIT

A. Description: NFPA 70, Type HDPE high-density polyethylene solid-wall conduit complying with ASTM F2160 and NEMA TC 7; list and label as complying with UL 651A; Schedule 40 unless otherwise indicated.
B. Joining Methods: Approved by HDPE conduit manufacturer.
C. Mechanical Fittings: Comply with ASTM F2176; list and label as complying with UL 651A.

2.12 INSIDE-PLANT FLEXIBLE NONMETALLIC COMMUNICATIONS RACEWAY/INNERDUCT

A. Description: Flexible, corrugated, nonmetallic communications raceway and associated fittings listed and labeled as complying with UL 2024; also suitable for installation as innerduct.
B. Use only with approved cables in accordance with listing.

2.13 ACCESSORIES

A. Conduit Joint Compound: Corrosion-resistant, electrically conductive compound listed as complying with UL 2419; suitable for use with conduit to be installed.
B. Solvent Cement for PVC Conduit and Fittings: As recommended by manufacturer of conduit and fittings to be installed.
C. Epoxy Adhesive for RTRC Conduit and Fittings: As recommended by manufacturer of conduit and fittings to be installed.
D. Adhesive for HDPE and RTRC Conduit:
   1. Specifically designed for bonding dissimilar materials in lieu of transition fittings, including but not limited to polyethylene, fiberglass, PVC, aluminum, and steel; UL 746C recognized.
   2. Approved by adhesive manufacturer for use with materials to be joined.
E. Pull Strings: Use nylon or polyester tape with average breaking strength of not less than 1,250 lbf.
F. Foam Conduit Sealant:
   1. Removable, two-part, closed-cell foam, specifically designed for sealing conduit openings against water, moisture, gases, and dust.
   2. Suitable for use with conductors/cables and associated insulation/jackets to be installed.
   3. Rated to hold minimum of 10 ft water head pressure.
G. Sealing Compound for Hazardous/Classified Location Sealing Fittings: Listed for use with particular fittings to be installed.
H. Sealing Systems for Concrete Penetrations:
   1. Sleeves: Provide water stop ring or cement coating that bonds to concrete to prevent water infiltration.
   2. Rate for minimum of 40 psig; suitable for sealing around conduits to be installed.
I. Flashing Panels for Exterior Wall Penetrations: Premanufactured components and accessories as required to preserve integrity of building envelope; suitable for conduits and facade materials to be installed.
J. Firestop Sleeves: Listed; provide as required to preserve fire resistance rating of building elements.

PART 3 EXECUTION

3.1 INSTALLATION

A. Install products in accordance with manufacturer's instructions.
B. Install conduit in accordance with NECA 1, BICSI ITSIMM, and BICSI N1.
C. Galvanized Steel Rigid Metal Conduit (RMC): Install in accordance with NECA 101.
D. Galvanized Steel Electrical Metallic Tubing (EMT): Install in accordance with NECA 101.
E. Rigid Polyvinyl Chloride (PVC) Conduit: Install in accordance with NECA 111.
F. Conduit Routing:
    1. Unless dimensioned, conduit routing indicated is diagrammatic.
    2. When conduit destination is indicated without specific routing, determine exact routing required.
    3. Conceal conduits unless specifically indicated to be exposed.
    4. Conduits in the following areas may be exposed, unless otherwise indicated:
        a. Electrical rooms.
        b. Communications rooms.
        c. Mechanical equipment rooms.
    5. Conduits installed underground or embedded in concrete may be routed in shortest possible manner unless otherwise indicated. Route other conduits parallel or perpendicular to building structure and surfaces, following surface contours where practical.
    6. Arrange conduit to maintain adequate headroom, clearances, and access.
    7. Arrange conduit to provide no more than equivalent of two 90-degree bend(s) between pull points.
    8. Arrange conduit to provide no more than 100 feet between pull points.
    9. Arrange conduit to provide minimum bend radii in accordance with BICSI TDMM.
    10. Route conduits above water and drain piping where possible.
    11. Arrange conduit to prevent moisture traps. Provide drain fittings at low points and at sealing fittings where moisture may collect.
    12. Maintain minimum clearance of 6 inches between conduits and piping for other systems.
    13. Maintain minimum clearance of 12 inches between conduits and hot surfaces. This includes, but is not limited to:
        a. Heaters.
        b. Hot water piping.
        c. Flues.
G. Conduit Support:
    1. Secure and support conduits in accordance with NFPA 70 using suitable supports and methods approved by authorities having jurisdiction.
    2. Provide independent support from building structure. Do not provide support from piping, ductwork, or other systems.
    3. Installation Above Suspended Ceilings: Do not provide support from ceiling support system. Do not provide support from ceiling grid or allow conduits to lay on ceiling tiles.
    4. Use conduit strap to support single surface-mounted conduit.
        a. Use clamp back spacer with conduit strap for damp and wet locations to provide space between conduit and mounting surface.
    5. Use conduit clamp to support single conduit from beam clamp or threaded rod.
    6. Use of wire for support of conduits is not permitted.
H. Connections and Terminations:
    1. Use approved zinc-rich paint or conduit joint compound on field-cut threads of galvanized steel conduits prior to making connections.

2. Where two threaded conduits must be joined and neither can be rotated, use three-piece couplings or split couplings. Do not use running threads.
3. Use suitable adapters where required to transition from one type of conduit to another.
4. Terminate threaded conduits in boxes and enclosures using threaded hubs or double lock nuts for dry locations and raintight hubs for wet locations.
5. Provide insulating bushings, insulated throats, or listed metal fittings with smooth, rounded edges at conduit terminations to protect cables.
6. Secure joints and connections to provide mechanical strength and electrical continuity.

I. Penetrations:
1. Do not penetrate or otherwise notch or cut structural members, including footings and grade beams, without approval of Structural Engineer.
2. Make penetrations perpendicular to surfaces unless otherwise indicated.
3. Provide sleeves and/or slots for penetrations as indicated or as required to facilitate installation.
4. Conceal bends for conduit risers emerging above ground.
5. Where conduits penetrate waterproof membrane, seal as required to maintain integrity of membrane.
6. Make penetrations for roof-mounted equipment within associated equipment openings and curbs where possible to minimize roofing system penetrations. Where penetrations are necessary, seal as indicated or as required to preserve integrity of roofing system and maintain roof warranty.
7. Install firestopping to preserve fire resistance rating of partitions and other elements.

J. Underground Installation:
1. Provide trenching and backfilling per 31 2300 - Excavation and Fill.
2. Minimum Cover, Unless Otherwise Indicated or Required:
   a. Underground, Exterior: 18 inches.
3. Provide copper conductor for use with toning location in conduit systems where only nonmetallic fiber optic cables are installed.

K. Conduit Movement Provisions: Where conduits are subject to movement, provide expansion and expansion/deflection fittings to prevent damage to enclosed cables or connected equipment. This includes, but is not limited to:
1. Where conduits cross structural joints intended for expansion, contraction, or deflection.
2. Where calculated in accordance with NFPA 70 for rigid polyvinyl chloride (PVC) conduit installed above ground to compensate for thermal expansion and contraction.
3. Where calculated in accordance with NFPA 70 for reinforced thermosetting resin conduit (RTRC) conduit installed above ground to compensate for thermal expansion and contraction.
4. Where conduits are subject to earth movement by settlement or frost.

L. Conduit Sealing:
1. Use foam conduit sealant to prevent entry of moisture and gases. This includes, but is not limited to:
   a. Where conduits enter building from outside.
   b. Where service conduits enter building from underground distribution system.
   c. Where conduits enter building from underground.
   d. Where conduits may transport moisture to contact live parts.
2. Where conduits cross barriers between areas of potential substantial temperature differential, use foam conduit sealant at accessible point near penetration to prevent condensation. This includes, but is not limited to:
   a. Where conduits pass from outdoors into conditioned interior spaces.
   b. Where conduits pass from unconditioned interior spaces into conditioned interior spaces.

3. Where conduits cross boundaries of hazardous/classified locations, provide identified/listed sealing fittings as approved by authorities having jurisdiction; locate as indicated or in accordance with NFPA 70.

M. Provide pull string in each empty conduit and innerduct/cell, and in each conduit where cables are to be installed by others. Leave minimum slack of 12 inches at each end.

N. Provide grounding and bonding.

3.2 PROTECTION

A. Immediately after installation of conduit, use suitable manufactured plugs to provide protection from entry of moisture and foreign material and do not remove until ready for installation of cables.

END OF SECTION

SECTION 27 1000
STRUCTURED CABLING

PART 1 GENERAL

1.1 SECTION INCLUDES
A. Communications pathways.
B. Copper cable and terminations.
C. Fiber optic cable and interconnecting devices.
D. Communications equipment room fittings.
E. Communications outlets.
F. Communications grounding and bonding.
G. Communications identification.

1.2 RELATED REQUIREMENTS
A. Section 26 0533.16 - Boxes for Electrical Systems.

1.3 REFERENCE STANDARDS
A. EIA/ECA-310 - Cabinets, Racks, Panels, and Associated Equipment; 2005e.
B. ICEA S-83-596 - Indoor Optical Fiber Cable; 2021.
C. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
D. TIA-455-21 - FOTP-21 - Mating Durability of Fiber Optic Interconnecting Devices; 1988a (Reaffirmed 2012).
E. TIA-492AAAA - Detail Specification for 62.5-um Core Diameter/125-um Cladding Diameter Class Ia Graded-Index Multimode Optical Fibers; 2009b.
F. TIA-568.2 - Balanced Twisted-Pair Telecommunications Cabling and Components Standards; 2018d, with Addenda (2020).
G. TIA-568.3 - Optical Fiber Cabling and Components Standard; 2022e.
H. TIA-606 - Administration Standard for Telecommunications Infrastructure; 2021d.
I. TIA-607 - Generic Telecommunications Bonding and Grounding (Earthing) for Customer Premises; 2019d, with Addendum (2021).
J. UL 444 - Communications Cables; Current Edition, Including All Revisions.
K. UL 514C - Nonmetallic Outlet Boxes, Flush-Device Boxes, and Covers; Current Edition, Including All Revisions.
L. UL 1651 - Fiber Optic Cable; Current Edition, Including All Revisions.
M. UL 1863 - Communications-Circuit Accessories; Current Edition, Including All Revisions.

1.4 ADMINISTRATIVE REQUIREMENTS
A. Coordination:
   1. Coordinate the work with other trades to avoid placement of other utilities or obstructions within the spaces dedicated for communications equipment.
   2. Coordinate arrangement of communications equipment with the dimensions and clearance requirements of the actual equipment to be installed.
   3. Notify Engineer of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

1.5 SUBMITTALS
A. Product Data: Provide manufacturer's standard catalog pages and data sheets for each product.
B. Evidence of qualifications for installer.
C. Field Test Reports.

PART 2 PRODUCTS

2.1 SYSTEM DESIGN

A. Provide a complete permanent system of cabling and pathways for voice and data communications, including cables, conduits and wireways, pull wires, support structures, enclosures and cabinets, and outlets.
   1. Provide fixed cables and pathways that comply with NFPA 70 and TIA-607 and are UL listed or third party independent testing laboratory certified.
   2. Provide connection devices that are rated for operation under conditions of 32 to 140 degrees F at relative humidity of 0 to 95 percent, noncondensing.
   3. In this project, the term plenum is defined as return air spaces above ceilings, inside ducts, under raised floors, and other air-handling spaces.

B. Main Distribution Frame (MDF): Centrally located support structure for terminating horizontal cables that extend to telecommunications outlets, functioning as point of presence to external service provider.
   1. Locate main distribution frame as indicated on the drawings.

C. Cabling to Outlets: Specified horizontal cabling, wired in star topology to distribution frame located at center hub of star; also referred to as "links".

2.2 COPPER CABLE AND TERMINATIONS

A. Copper Horizontal Cable:
   1. Description: 100 ohm, balanced twisted pair cable complying with TIA-568.2 and listed and labeled as complying with UL 444.
   2. Cable Type - Voice and Data: TIA-568.2 Category 6 UTP (unshielded twisted pair); 23 AWG.
   3. Cable Capacity: 4-pair.
   4. Cable Applications:
      a. Plenum Applications: Use listed NFPA 70 Type CMP plenum cable.

B. Copper Cable Terminations: Insulation displacement connection (IDC) type using appropriate tool; use screw connections only where specifically indicated.

C. Jacks and Connectors: Modular RJ-45, non-keyed, terminated with 110-style insulation displacement connectors (IDC); high impact thermoplastic housing; suitable for and complying with same standard as specified horizontal cable; UL 1863 listed.
   1. Performance: 500 mating cycles.
   2. Voice and Data Jacks: 8-position modular jack, color-coded for both T568A and T568B wiring configurations.

D. Copper Patch Cords:
   1. Description: Factory-fabricated 4-pair cable assemblies with 8-position modular connectors terminated at each end.
   2. Patch Cords for Patch Panels:
      a. Quantity: One for each pair of patch panel ports.
      b. Length: 6 feet.

2.3 FIBER OPTIC CABLE AND INTERCONNECTING DEVICES

A. Fiber Optic Horizontal Cable:
   1. Description: Tight buffered, non-conductive fiber optic cable complying with TIA-568.3, ICEA S-83-596 and listed as complying with UL 444 and UL 1651.
   2. Cable Type: Multimode, 62.5/125 um (OM1) complying with TIA-492AAAA.
   3. Cable Capacity: Quantity of fibers as indicated on drawings.
   4. Cable Applications: Use listed NFPA 70 Type OFNP plenum cable unless otherwise indicated.

B. Fiber Optic Interconnecting Devices:

1. Connector Type: Type LC.
2. Connector Performance: 500 mating cycles, when tested in accordance with TIA-455-21.
3. Maximum Attenuation/Insertion Loss: 0.3 dB.

C. Fiber Optic Patch Cords:
1. Description: Factory-fabricated 2-fiber cable assemblies with suitable connectors at each end.
2. Patch Cords for Patch Panels:
a. Quantity: One for each pair of patch panel ports.
b. Length: 10 feet.

2.4 COMMUNICATIONS EQUIPMENT ROOM FITTINGS

A. Copper Cross-Connection Equipment:
1. Patch Panels for Copper Cabling: Sized to fit EIA/ECA-310 standard 19 inch wide equipment racks; 0.09 inch thick aluminum; cabling terminated on Type 110 insulation displacement connectors; printed circuit board interface.
a. Jacks: Non-keyed RJ-45, suitable for and complying with same standard as cable to be terminated; maximum 48 ports per standard width panel.
b. Capacity: Provide ports sufficient for cables to be terminated plus 25 percent spare.
c. Labels: Factory installed laminated plastic nameplates above each port, numbered consecutively; comply with TIA-606.
d. Provide incoming cable strain relief and routing guides on back of panel.

B. Fiber Optic Cross-Connection Equipment:
1. Patch Panels for Fiber Optic Cabling: Sized to fit EIA/ECA-310 standard 19 inch wide equipment racks; 0.09 inch thick aluminum.
a. Adapters: As specified above under FIBER OPTIC CABLE AND INTERCONNECTING DEVICES; maximum of 24 duplex adaptors per standard panel width.
b. Labels: Factory installed laminated plastic nameplates above each port, numbered consecutively; comply with TIA-606.
c. Provide incoming cable strain relief and routing guides on back of panel.
d. Provide rear cable management tray at least 8 inches deep with removable cover.
e. Provide dust covers for unused adapters.

2.5 COMMUNICATIONS OUTLETS

A. Outlet Boxes: Comply with Section 26 0533.16.
1. Provide depth as required to accommodate cable manufacturer's recommended minimum conductor bend radius.

B. Wall Plates:
1. Comply with system design standards and UL 514C.
2. Accepts modular jacks/inserts.
3. Capacity:
a. Data or Combination Voice/Data Outlets: 1 ports.

2.6 GROUNDING AND BONDING COMPONENTS

A. Comply with TIA-607.

2.7 IDENTIFICATION PRODUCTS

A. Comply with TIA-606.

PART 3 EXECUTION

3.1 INSTALLATION - GENERAL

A. Comply with Communication Service Provider requirements.
B. Grounding and Bonding: Perform in accordance with TIA-607 and NFPA 70.

C. Install firestopping to preserve fire resistance rating of partitions and other elements.

3.2 INSTALLATION OF PATHWAYS

A. Install pathways with the following minimum clearances:
   1. 48 inches from motors, generators, frequency converters, transformers, x-ray equipment, and uninterruptible power systems.
   2. 12 inches from power conduits and cables and panelboards.
   3. 5 inches from fluorescent and high frequency lighting fixtures.
   4. 6 inches from flues, hot water pipes, and steam pipes.

B. Outlet Boxes:
   1. Coordinate locations of outlet boxes provided under Section 26 0533.16 as required for installation of telecommunications outlets provided under this section.

3.3 INSTALLATION OF EQUIPMENT AND CABLING

A. Cabling:
   1. Do not bend cable at radius less than manufacturer's recommended bend radius; for unshielded twisted pair use bend radius of not less than 4 times cable diameter.
   2. Do not over-cinch or crush cables.
   3. Do not exceed manufacturer's recommended cable pull tension.
   4. When installing in conduit, use only lubricants approved by cable manufacturer and do not chafe or damage outer jacket.

B. Service Loops (Slack or Excess Length): Provide the following minimum extra length of cable, looped neatly:
   1. At Distribution Frames: 120 inches.
   2. At Outlets - Copper: 12 inches.
   3. At Outlets - Optical Fiber: 39 inches.

C. Copper Cabling:
   1. Category 5e and Above: Maintain cable geometry; do not untwist more than 1/2 inch from point of termination.
   2. For 4-pair cables in conduit, do not exceed 25 pounds pull tension.
   3. Use T568B wiring configuration.

D. Fiber Optic Cabling:
   1. Prepare for pulling by cutting outer jacket for 10 inches from end, leaving strength members exposed. Twist strength members together and attach to pulling eye.
   2. Support vertical cable at intervals as recommended by manufacturer.

E. Wall-Mounted Racks and Enclosures:
   1. Install to plywood backboards only, unless otherwise indicated.
   2. Mount so height of topmost panel does not exceed 78 inches above floor.

F. Identification:
   1. Use wire and cable markers to identify cables at each end.
   2. Use manufacturer-furnished label inserts, identification labels, or engraved wallplate to identify each jack at communications outlets with unique identifier.
   3. Use identification nameplate to identify cross-connection equipment, equipment racks, and cabinets.

3.4 FIELD QUALITY CONTROL

A. Comply with inspection and testing requirements of specified installation standards.

B. Visual Inspection:
   1. Inspect cable jackets for certification markings.
   2. Inspect cable terminations for color coded labels of proper type.
   3. Inspect outlet plates and patch panels for complete labels.

C. Testing - Copper Cabling and Associated Equipment:

1. Category 5e and Above Links: Perform tests for wire map, length, attenuation, NEXT, and propagation delay.

D. Testing - Fiber Optic Cabling:
1. Links: Perform optical fiber end-to-end attenuation tests and field reel tests.

E. Final Testing: After all work is complete, including installation of telecommunications outlets, and telephone dial tone service is active, test each voice jack for dial tone.

END OF SECTION

SECTION 27 1100
COMMUNICATIONS EQUIPMENT ROOM FITTINGS - SCHNEIDER ELECTRIC APC

PART 1 GENERAL

1.1 SECTION INCLUDES
A. Communications cabinets, racks, frames, and enclosures.
B. Communications rack-mounted uninterruptible power supply.

1.2 RELATED REQUIREMENTS
A. Section 26 0526 - Grounding and Bonding for Electrical Systems.
B. Section 27 0526 - Grounding and Bonding for Communications Systems.
C. Section 27 1000 - Structured Cabling.
D. Section 28 1000 - Access Control.
E. Section 28 2000 - Video Surveillance.

1.3 REFERENCE STANDARDS
A. 47 CFR 15 - Radio Frequency Devices; current edition.
B. ISO 9001 - Quality Management Systems — Requirements; 2015, with Amendment (2024).
C. ISO 14001 - Environmental Management Systems — Requirements with Guidance for Use; 2015.
D. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2015.
E. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
F. TIA-607 - Generic Telecommunications Bonding and Grounding (Earthing) for Customer Premises; 2019d, with Addendum (2021).
G. UL 94 - Tests for Flammability of Plastic Materials for Parts in Devices and Appliances; Current Edition, Including All Revisions.
H. UL 1449 - Standard for Surge Protective Devices; Current Edition, Including All Revisions.
I. UL 1778 - Uninterruptible Power Systems; Current Edition, Including All Revisions.

1.4 ADMINISTRATIVE REQUIREMENTS
A. Coordination:
   1. Coordinate arrangement of communications equipment with dimensions and clearance requirements of actual equipment to be installed.
   2. Notify Engineer of conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.
B. Preinstallation Meeting:
   1. Conduct meeting with facility representative to review camera and equipment locations and camera field of view objectives.
   2. Conduct meeting with facility representative and other related equipment manufacturers to discuss video surveillance system interface requirements.

1.5 SUBMITTALS
A. Product Data:
   1. Provide technical specifications or equipment brochures. Indicate installed features and accessories.
   2. Include system operating diagram.
B. Specimen Warranty: Statement of standard warranty.

1.6 QUALITY ASSURANCE
A. Comply with the following:
   1. NFPA 70.

2. Requirements of authorities having jurisdiction.
3. Applicable local codes.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Package products to prevent penetration by debris and allow safe delivery by ground/air transportation. Inspect products at factory for damage prior to shipping.
B. Deliver materials to project site in supplier's or manufacturer's original wrappings and containers, labeled with supplier's or manufacturer's name, material or product brand name, and equipment tag number or service name as identified in Contract Documents.
C. Store materials in their original, undamaged packages and containers, in well-ventilated area protected from weather, moisture, soiling, extreme temperatures, humidity, and corrosive atmospheres.
D. Equipment Containing Batteries: Do not exceed three months of storage without powering for eight hours to recharge batteries.

1.8 FIELD CONDITIONS

A. Maintain field conditions within manufacturer's required service conditions during and after installation.

1.9 WARRANTY

A. Manufacturer Warranty: Provide manufacturer warranty for defects in material and workmanship for duration below. Complete forms in Owner's name and register with manufacturer.
   1. Rack-Mounted UPS: Provide warranty from date of installation or acceptance by Owner, or 18 months from date of shipment, whichever occurs first.
      a. Rack-Mounted UPS with Lithium-ion: Five years.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Schneider Electric; APC: www.se.com/#sle.
B. Eaton Tripp Lite.
C. Substitutions: See Section 01 6000 - Product Requirements.

2.2 COMMUNICATIONS EQUIPMENT ROOM FITTINGS APPLICATIONS

A. Provide new communication equipment room fittings consisting of required components (e.g., equipment, conduit, boxes, connectors, hardware, supports, accessories, software, and system programming) as necessary for complete operating system that provides functional intent indicated.
B. Products: Listed, classified, and labeled as suitable for purpose intended.
C. Interface with Other Systems: Provide products compatible with other systems that require interfacing.
   1. Access control; see Section 28 1000.
   2. Video surveillance; see Section 28 2000.
D. Small IT Application:
   1. Enclosure Style: Wall-mounted.
   2. Rack-Mounted UPS: 1,500 VA, nominal capacity.
      a. UPS Topology: Line-interactive.

2.3 COMMUNICATIONS CABINETS, RACKS, FRAMES, AND ENCLOSURES

A. Cabinets: Steel construction with corrosion resistant finish.
B. Locks: Keyed alike.
C. Cover inside of cabinet back with plywood backboard as specified.

D. Wall-Mounted Cabinets: Front doors with locks, louvered side panels, top and bottom cable access, and ground lug.
E. Accommodate AC normal power outlet inside cabinet.
F. Include enclosure-mounted fan and provide associated branch circuit power requirements.
G. Products:
    1. Wall-mounted cabinet; Schneider Electric; APC Model AR100HD NetShelter, 13U, vented door, double hinged server depth; black.
        a. Roof fan tray; Schneider Electric; APC Model AR8206ABLK for NetShelter WX enclosures, 120 V.

2.4 COMMUNICATIONS RACK-MOUNTED UNINTERRUPTIBLE POWER SUPPLY

A. UPS System Description:
    1. Provide high-performance, 1-phase, solid-state, static UPS.
    2. DC-Link, Energy Source Type: Lithium-ion.
    3. Meet requirements in ENERGY STAR Version 2.0.
    4. Listed and labeled as complying with UL 1778.
    5. RoHS/REACH compliant.
    6. Electromagnetic Interference/Radio Frequency Interference (EMI/RFI) Limits: Comply with FCC requirements of 47 CFR 15.
    7. Provide UPS backed AC power to protect electronic equipment; include automatic internal voltage regulation.
    8. UPS and associated equipment to operate in conjunction with primary power supply to provide quality uninterrupted power for mission critical, electronic equipment load.
    9. Provide programming and components for fully operational system.
    10. Modes of Operation: Online, on battery, and battery charging.
    11. Flammability ratings of UL 94 and contained in rugged steel cabinet.
    12. Communication Enclosure Mounting:
        a. Wall-Mounted: Short depth UPS versions are provided with two-post rack mounting hardware.
B. UPS System Characteristics:
    1. Input Frequency Range: 50/60 Hz plus/minus 3 Hz, auto sensing.
    2. Input Voltage:
        a. 120 V Units: Nominal 120 V, input voltage range for main operation 82 to 143 V; input voltage adjustable range for mains operation 75 to 154 V.
    3. Output Waveform: Sine wave, with total harmonic distortion less than five percent at full load.
    4. Output Frequency:
        a. 60 Hz plus/minus 3 Hz tracking input sine wave when online tracking.
    5. Output Voltage: Matching input voltage.
    6. Output Voltage Distortion: Less than five percent at full load.
    7. Output Frequency: Synchronize to mains, 47 to 53 Hz for 50 Hz nominal and 57 to 63 Hz for 60 Hz nominal.
    8. Battery Recharge Time: Three hours from 0 percent to 90 percent via internal batteries only.
    9. Noise Filtering: Full time multi-pole noise filtering: 0.3 percent IEEE surge let-through, zero clamping response time, meets UL 1449.
C. Battery Characteristics:
    1. UPS battery system comprised of user replaceable, hot swappable, battery modules.
    2. Incorporate unique battery replacement date indicator.
    3. Charging:

a. Intelligent battery management system contains temperature monitoring circuit and compensation algorithm that regulates battery charging current to optimize battery life.
b. Battery charging circuit remains active when in online state.

4. Display and Controls: Embedded microcontroller for monitoring and management via push button LCD interface.
5. Audible Alarms: Using audio signal, UPS will notify user about important events. Alarms, except for low battery, may be muted using interface. In addition, touching display buttons during active alarm will also mute that alarm. The following list requires distinct audio alarms, while running in any operating configuration:
6. Network Adaptor: Embedded network management card allows one or more network management systems (NMS) to monitor and manage UPS in TCP/IP network environments or via web interface.
7. Remote UPS Control, Configuration and Monitoring:
   a. UPS monitoring, configuration and control are available via management software supplied with UPS.
   b. Web Monitoring: Remote monitoring, configuration and control are available via web browser such as Internet Explorer provided UPS is equipped with network management card.
   c. Dry contact monitoring and control provided UPS is equipped with relay I/O card.

D. Products:
   1. Refer to plans for Basis of Design.

PART 3 EXECUTION

3.1 EXAMINATION

A. Examine equipment for damage including, but not limited to, structural, moisture, and mildew.

3.2 INSTALLATION

A. Communications Grounding and Bonding: Comply with TIA-607 and NFPA 70.
   1. See Section 27 0526.
B. Perform work in accordance with NECA 1, general workmanship.
C. Install equipment in accordance with manufacturer's written instructions.
D. Coordinate and install pathways and outlet boxes in accordance with project requirements.
E. Structured Cabling: See Section 27 1000.
F. UPS and Electrical Grounding and Bonding: See Section 26 0526.
G. Identification:
   1. Use labels to identify equipment.
   2. Use manufacturer-furnished label inserts to identify communications equipment room fittings with unique identifiers.
   3. Use identification nameplates to identify cross-connection equipment, equipment cabinets, racks, frames, and enclosures as indicated on drawings.

3.3 FIELD QUALITY CONTROL

A. Operational Readiness:
   1. Inspect and test equipment and associated systems for conformance to Contract Documents, including equipment manufacturer's recommendations, and readiness for operation.
      a. Visual Inspection:
         1) Inspect equipment for signs of damage.
         2) Verify installation per manufacturer's instructions.
         3) Inspect cabinets for foreign objects.

4) Inspect batteries.
5) Measure board voltages.
6) Inspect patch cords for complete labels.

b. Electrical Inspection:
1) Verify correct input and bypass voltage; or outlet configurations.
2) Verify correct control wiring and terminations.
3) Verify voltage of batteries.
4) Verify neutral and ground conductor terminations.

c. Final Testing:
1) Verify system startup.
2) Verify maintenance bypass switch operation.
3) Simulate UPS input power failure.
4) Verify charger operation.

d. Correct deficiencies and replace damaged or defective equipment or associated components.

3.4 PROTECTION

A. Protect installed equipment from subsequent construction operations.

END OF SECTION

SECTION 27 1523.13
POWERED FIBER CABLE SYSTEM - COMMSCOPE

PART 1 GENERAL

1.1 SECTION INCLUDES
A. Power over Ethernet (PoE)/power extenders.
B. DC power supplies.

1.2 REFERENCE STANDARDS
A. IEC 60529 - Degrees of Protection Provided by Enclosures (IP Code); 1989 (Corrigendum 2019).
B. IEC 60950-22 - Information Technology Equipment – Safety – Part 22: Equipment to be Installed Outdoors; 2016.
C. IEC 62368-1 - Audio/Video, Information and Communication Technology Equipment - Part 1: Safety Requirements; 2018 (Corrigendum 2020).
D. ITU-T K.45 - Resistibility of Telecommunication Equipment Installed in the Access and Trunk Networks to Overvoltages and Overcurrents; 2019, with Amendments (2020).
E. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
F. TIA-568.3 - Optical Fiber Cabling and Components Standard; 2022e.
G. TIA-598 - Optical Fiber Cable Color Coding; 2014d, with Addendum (2018).
H. UL 444 - Communications Cables; Current Edition, Including All Revisions.

1.3 ADMINISTRATIVE REQUIREMENTS
A. Coordination:
1. Coordinate work to provide rough-ins for powered fiber cable terminations at required locations.
2. Notify Engineer of conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

1.4 SUBMITTALS
A. See Section 01 3000 - Administrative Requirements for submittal procedures.
B. Product Data: Provide manufacturer's standard catalog pages and data sheets for system components, including detailed information on materials, construction, ratings, listings, and available configurations.

PART 2 PRODUCTS

2.1 FIBER CABLE SYSTEM - GENERAL REQUIREMENTS
A. Unless specifically indicated as excluded, provide components necessary for complete operating system including, but not limited to, fiber cables, power over Ethernet (PoE)/power extenders, DC power supplies, and accessories.

2.2 POWER OVER ETHERNET (POE)/POWER EXTENDERS
A. Description: Fiber cable system component designed for termination of fiber cables at remote devices.
B. Comply with IEC 60950-22 and IEC 62368-1.
C. Electrical Protection:
1. Provide three levels of surge protection:
a. Primary: Metal oxide varistor (MOV); 4.5 kA surge current rating; differential and common mode protection.
b. Secondary: MOV and inductors; limits maximum voltage to between 100 and 150 V.

c. Tertiary: Transient voltage suppression (TVS); limits maximum voltage to between 80 and 100 V; differential mode protection.

2. Provide cross-polarity protection; functionality independent of circuit input polarity.
3. Provide AC cross protection; 4 A nonreplaceable fuses.

D. Termination Block: Designed for maximum contact resistance of 1 milliohm after minimum of 200 reterminations.

E. Enclosure:
1. Environmentally sealed and tested with IEC 60529 rating of IP 68.
2. Include provisions for wall or pole mounting.
3. Include removable sun shield for extreme ambient temperature applications.

F. Unit Ratings:
1. Storage Temperature: Between minus 40 degrees F and 158 degrees F.
2. Operating Temperature: Between minus 40 degrees F and 149 degrees F.
3. Installation Temperature: Between 23 degrees F and 113 degrees F.

G. Power Over Ethernet (PoE) Extenders:
1. Power/ Communications Output: PoE+ compliant RJ45 jack, one or two ports as indicated or as required; support media conversion from optical fiber to copper utilizing field-installed small form-factor pluggable (SFP) modules and type LC fiber connectors.
2. PoE Port Protection: Comply with ITU-T K.45.

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 28 1000
ACCESS CONTROL

PART 1 GENERAL

1.1 SECTION INCLUDES
A. Access control system requirements.
B. Access control units and software.
C. Access control point peripherals, including readers and keypads.
D. Accessories.

1.2 RELATED REQUIREMENTS
A. Section 08 7100 - Door Hardware: Electrically operated door hardware, for interface with access control system.
B. Section 11 1200 - Parking Control Equipment: Parking gates, for interface with access control system.
C. Section 26 0526 - Grounding and Bonding for Electrical Systems.
D. Section 26 0533.13 - Conduit for Electrical Systems.
E. Section 28 2000 - Video Surveillance: For interface with access control system.

1.3 DEFINITIONS
A. Access Control Cloud Services: Subscription-based hosted application utilizing Software as a Service (SaaS) delivery model in lieu of on-premises servers/software.

1.4 REFERENCE STANDARDS
A. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2015.
B. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
C. UL 294 - Access Control System Units; Current Edition, Including All Revisions.

1.5 ADMINISTRATIVE REQUIREMENTS
A. Coordination:
   1. Coordinate the work with other installers to provide suitable door hardware as required for both access control functionality and code compliance.
   2. Coordinate the placement of readers with millwork, furniture, equipment, etc. installed under other sections or by others.
   3. Coordinate the work with other installers to provide power for equipment at required locations.
   4. Notify Engineer of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.
B. Access Control Cloud Services:
   1. Subscription fees to be paid by Owner.
   2. Obtain Owner approval of subscription fees and terms of service prior to submittal.
   3. Provide all subscriptions for five years.
C. Preinstallation Meetings:
   1. Conduct meeting with facility representative to review reader and equipment locations.
   2. Conduct meeting with facility representative and other related equipment manufacturers to discuss access control system interface requirements.

1.6 SUBMITTALS
A. Refer to section **01 2300 - Alternates** for requirements on submitting bid for both On-Premesis and Cloud Based systems.
B. Shop Drawings: Include plan views indicating locations of system components and proposed size, type, and routing of conduits and/or cables. Include elevations and details of proposed

equipment arrangements. Include system interconnection schematic diagrams. Include requirements for interface with other systems.

C. Product Data: Provide manufacturer's standard catalog pages and data sheets for each system component. Include ratings, configurations, standard wiring diagrams, dimensions, finishes, service condition requirements, and installed features.
D. Evidence of qualifications for installer.
E. Maintenance contracts.
F. Warranty: Submit sample of manufacturer's warranty and documentation of final executed warranty completed in Owner's name and registered with manufacturer.
G. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
    1. Deliver blank credentials to Owner as directed.

1.7 QUALITY ASSURANCE

A. Comply with the following:
    1. NFPA 70.
    2. The requirements of the local authorities having jurisdiction.
    3. Applicable TIA/EIA standards.
B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.
C. Installer Qualifications: Company specializing in performing the work of this section with minimum three years documented experience with access control systems of similar size, type, and complexity and providing contract maintenance service as a regular part of their business; authorized manufacturer's representative.
    1. Contract maintenance office located within 100 miles of project site.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Receive, inspect, handle, and store products in accordance with manufacturer's instructions.
B. Store products in manufacturer's unopened packaging, keep dry and protect from damage until ready for installation.

1.9 WARRANTY

A. Provide minimum one year manufacturer warranty covering repair or replacement due to defective materials or workmanship.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Access Control Units:
    1. Motorola Avigilon
    2. Gallagher
    3. Substitutions: See Section 01 6000 - Product Requirements.
B. Access Control Software:
    1. Motorola Avigilon
    2. Gallagher
    3. Substitutions: See Section 01 6000 - Product Requirements.
C. Access Control Cloud Services:
    1. Motorola Avigilon
    2. Gallagher
D. Readers and Keypads:
    1. Avigilon Smart Readers
    2. Gallagher
    3. Substitutions: See Section 01 6000 - Product Requirements.

E. All substitution request must be received at least one week prior to bid date. For manufacturers not approved/listed above, the Owner will request a demonstration of the system. Manufacturer's wanting to be approved for this project must provide a demonstration to Owner for approval prior to bid date.

2.2 ACCESS CONTROL SYSTEM REQUIREMENTS

A. Provide new access control system consisting of required equipment, conduit, boxes, wiring, connectors, hardware, supports, accessories, software, system programming, etc. as necessary for a complete operating system that provides the functional intent indicated.
B. System Battery Backup: Provide batteries/uninterruptible power supplies (UPS) as required for 60 minutes full operation.
C. Surge Protection:
D. Access Control Points:
    1. Typical Door:
        a. Function: Operational and emergency.
        b. Access: Controlled entry, free exit.
        c. Peripherals on Unsecure Side:
            1) Reader/Keypad: See plans for Basis of Design at each door. .
        d. Peripherals on Secure Side:
            1) Door position switch.
        e. Locking Device: Electric strike.
            1) Configuration: Fail-secure.
        f. Interface Requirements:
            1) Provide interface with handicapped automatic door operator where required.
    2. Typical Parking Gate:
        a. Access: Controlled entry, free exit.
        b. Peripherals on Unsecure Side:
            1) Reader/Keypad: Contactless smart card reader.
E. Interface with Other Systems:
    1. Provide products compatible with other systems requiring interface with access control system.
    2. Interface with electrically operated door hardware as specified in Section 08 7100.
        a. Capable of locking/unlocking/releasing controlled doors.
        b. Capable of receiving input from integral door hardware switches.
    3. Interface with parking control gates as specified in Section 11 1200.
        a. Capable of controlling gate access.
    4. Interface with video surveillance system as specified in Section 28 2000.
        a. Capable of affecting camera/video operation for selected access control system events.
F. Provide products listed, classified, and labeled as suitable for the purpose intended.
    1. Access Control Units and Readers: Listed and labeled as complying with UL 294.

2.3 ACCESS CONTROL UNITS AND SOFTWARE

A. Provide access control units and software compatible with readers to be connected.
B. Unless otherwise indicated, provide software and licenses required for fully operational system.
C. Access Control Unit:
    1. Control Capability: 1-16 doors; 250 readers.
    2. Operating Modes Supported:
        a. Card only.
        b. Card and PIN.
        c. Anti-passback.
    3. Alarm Inputs: 8.

4. Output Relays: 2.
5. Features:
    a. Dedicated tamper alarm input.
    b. Dedicated power loss alarm input.
    c. Supports database and event exporting.
    d. Supports database backup.
    e. Integral backup battery system.

D. Products:
1. Access Control Units:
    a. Gallagher; Controller 6000 and above
    b. Avigilon; Unity Access 7
    c. Substitutions: See Section 01 6000 - Product Requirements.
2. Access Control Software:
    a. Gallagher
    b. Avigilon
    c. Substitutions: See Section 01 6000 - Product Requirements.
3. Access Control Cloud Services:
    a. Gallagher - Provide both on-prem and cloud based pricing to be evaluated by Owner.
    b. Avigilon - Provide both on-prem and cloud based pricing to be evaluated by Owner.
    c. Substitutions: See Section 01 6000 - Product Requirements.

2.4 ACCESS CONTROL POINT PERIPHERALS

A. Provide devices compatible with control units and software.
B. Provide devices suitable for operation under the service conditions at the installed location.
C. Readers and Keypads:
1. General Requirements:
    a. Provide readers compatible with credentials to be used.
    b. Color: Black.
    c. Contactless Smart Card Readers:
        1) Utilize 13.56 MHz RF communication with compatible credentials.
        2) Utilize 64 bit authentication keys.
        3) Support ISO compliant credentials.
        4) Support data encryption.
    d. Proximity Readers:
        1) Utilize 125 kHz RF communication with compatible credentials.
    e. Bluetooth Low Energy (BLE) Readers:
        1) Utilize 2.4 GHz RF communication with compatible mobile devices.
2. Combination Reader:
    a. Credentials Supported: Communicates with Bluetooth Low Energy (BLE) mobile credentials, 13.56 MHz smart cards, 125 kHz proximity cards, and near-field communication (NFC) credentials.
    b. Features:
        1) Tamper output.
        2) Keypad, where shown on plans.
3. Contactless Smart Card Reader:
    a. Read Range: Up to 120 inches.
    b. Features:
        1) Keypad.
4. Proximity Reader:
    a. Read Range: Up to 120 inches.
    b. Features:

1) Keypad.

D. Door Position Switches:
1. Magnetic Contacts: Encapsulated reed switch(es) and separate magnet; designed to monitor opened/closed position of doors.
2. Contact Color: To be selected by Owner if applicable.

E. Door Locking Devices (Electric Strikes and Magnetic Locks): Comply with Section 08 7100.

2.5 ACCESSORIES

A. Provide components as indicated or as required for connection of access control system to devices and other systems indicated.
B. Unless otherwise indicated, credentials to be provided by Contractor.
1. Provide credentials compatible with readers and control units/software to be used.
2. Credential Type: Mobile Phone, Smart Cards.
C. Unless otherwise indicated, network switches required for network connections to system components to be provided by Contractor.
D. Provide cables as indicated or as required for connections between system components.
E. Provide accessory racks/cabinets as indicated or as required for equipment mounting.

PART 3 EXECUTION

3.1 INSTALLATION

A. Install access control system in accordance with NECA 1 (general workmanship).
B. Install products in accordance with manufacturer's instructions.
C. Wiring Method: Unless otherwise indicated, use cables (not in conduit).
1. Use suitable listed cables in wet locations, including underground raceways.
2. Use suitable listed cables for vertical riser applications.
3. Use listed plenum rated cables in spaces used for environmental air.
4. Install wiring in conduit for the following:
a. Where required for rough-in.
b. Where required by authorities having jurisdiction.
c. Where exposed to damage.
d. Where installed outside the building.
e. For exposed connections from outlet boxes to devices.
5. Conduit: Comply with Section 26 0533.13.
6. Conceal cables unless specifically indicated to be exposed.
7. Use power transfer hinges complying with Section 08 7100 for concealed connections to door hardware.
8. Cables in the following areas may be exposed, unless otherwise indicated:
a. Equipment closets.
b. Within joists in areas with no ceiling.
9. Route exposed cables parallel or perpendicular to building structural members and surfaces.
10. Do not exceed manufacturer's recommended maximum cable length between components.
D. Provide grounding and bonding in accordance with Section 26 0526.
E. Install firestopping to preserve fire resistance rating of partitions and other elements.
F. Identify system wiring and components in accordance with Section 26 0553.

3.2 FIELD QUALITY CONTROL

A. Provide services of a manufacturer's authorized representative to observe installation and assist in inspection and testing. Include manufacturer's detailed testing procedures and field reports with submittals.

B. Prepare and start system in accordance with manufacturer's instructions.
C. Program system parameters according to requirements of Owner.
D. Test for proper interface with other systems.
E. Correct defective work, adjust for proper operation, and retest until entire system complies with Contract Documents.

3.3 CLEANING

A. Clean exposed surfaces to remove dirt, paint, or other foreign material and restore to match original factory finish.

3.4 CLOSEOUT ACTIVITIES

A. Demonstration: Demonstrate proper operation of system to Owner, and correct deficiencies or make adjustments as directed.
B. Training: Train Owner's personnel on operation, adjustment, and maintenance of system.
   1. Use operation and maintenance manual as training reference, supplemented with additional training materials as required.
   2. Provide minimum of one day of training split into two sessions or as requested by Owner.
   3. Instructor: Manufacturer's authorized representative.
   4. Location: At project site.

3.5 MAINTENANCE

A. Provide trouble call-back service upon notification by Owner:
   1. Include allowance for call-back service during normal working hours at no extra cost to Owner.
   2. Owner will pay for call-back service outside of normal working hours on an hourly basis, based on actual time spent at site and not including travel time; include hourly rate and definition of normal working hours in maintenance contract.

END OF SECTION

SECTION 28 2000
VIDEO SURVEILLANCE

PART 1 GENERAL

1.1 SECTION INCLUDES
A. Video surveillance system requirements.
B. Video recording and viewing equipment.
C. Cameras.

1.2 RELATED REQUIREMENTS
A. Section 03 3000 - Cast-in-Place Concrete: Materials and installation requirements for concrete bases for camera poles.
B. Section 26 0526 - Grounding and Bonding for Electrical Systems.
C. Section 26 0529 - Hangers and Supports for Electrical Systems.
D. Section 26 0533.13 - Conduit for Electrical Systems.
E. Section 27 1000 - Structured Cabling: Data cables for IP video surveillance system network connections.
F. Section 28 1000 - Access Control: For interface with video surveillance system.

1.3 REFERENCE STANDARDS
A. 47 CFR 15 - Radio Frequency Devices; current edition.
B. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2015.
C. NECA 303 - Standard for Installing and Maintaining Closed-Circuit Television (CCTV) Systems; 2019.

1.4 ADMINISTRATIVE REQUIREMENTS
A. Coordination:
   1. Coordinate the placement of cameras with structural members, ductwork, piping, equipment, luminaires, diffusers, fire suppression system components, and other potential conflicts installed under other sections or by others.
   2. Coordinate the work with other installers to provide power for cameras and equipment at required locations.
   3. Notify Engineer of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.
B. Preinstallation Meetings:
   1. Conduct meeting with facility representative to review camera and equipment locations and camera field of view objectives.
   2. Conduct meeting with facility representative and other related equipment manufacturers to discuss video surveillance system interface requirements.

1.5 SUBMITTALS
A. Product Data: Provide manufacturer's standard catalog pages and data sheets for each system component. Include ratings, configurations, standard wiring diagrams, dimensions, finishes, service condition requirements, and installed features.
   1. Camera Poles: Include information on maximum supported effective projected area (EPA) and weight for design wind speed.
B. Design Data:
   1. Video storage capacity calculations for on-prem solution.
C. Evidence of qualifications for installer.
D. Warranty: Submit sample of manufacturer's warranty and documentation of final executed warranty completed in Owner's name and registered with manufacturer.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Receive, inspect, handle, and store products in accordance with manufacturer's instructions and NECA 303.

B. Store products in manufacturer's unopened packaging, keep dry and protect from damage until ready for installation.

1.7 WARRANTY

A. Provide minimum one year manufacturer warranty covering repair or replacement due to defective materials or workmanship.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Video Recording and Viewing Equipment and Software:
   1. Avigilon Security Systems: https://www.avigilon.com/
   2. Hanwha Vision: https://hanwhavisionamerica.com/
   3. Verkada: https://www.verkada.com/
   4. Substitutions: See Section 01 6000 - Product Requirements.
   5. All substitution request must be received at least one week prior to bid date. For manufacturers not approved/listed above, the Owner will request a demonstration of the system. Manufacturer's wanting to be approved for this project must provide a demonstration to Owner for approval prior to bid date.

B. Cameras:
   1. Avigilon Security Systems: https://www.avigilon.com/
   2. Hanwha Vision: https://hanwhavisionamerica.com/
   3. Verkada: https://www.verkada.com/.
   4. Substitutions: See Section 01 6000 - Product Requirements.

C. Source Limitations: Where possible, furnish system components and accessories produced by single manufacturer and obtained from single supplier.

2.2 VIDEO SURVEILLANCE SYSTEM

A. Provide new video surveillance system consisting of all required equipment, conduit, boxes, wiring, connectors, hardware, supports, accessories, software, system programming, etc. as necessary for a complete operating system that provides the functional intent indicated.

B. System Description: IP system with connection to network (IP) cameras.
   1. Video Storage Capacity: As indicated on plan for On-Premesis solution.
   2. Surge Protection:
      a. Provide surge protection for exterior cameras.

C. Cameras Required:
   1. Refer to plans for Basis of Design for camera type.
   2. Provide all lenses, mounting hardware, enclosures and accessories.

D. Video Recording and Viewing Equipment Required:
   1. In MDF at each building for on-premesis solution. :
      a. Network Video Recorder (NVR) 6 or 12 TB, see plans for specific storage size at each building.
      b. NVR server located at City Hall. To be selected and provided by awarded manufacturer.

E. Interface with Other Systems:
   1. Provide products compatible with other systems requiring interface with video surveillance system.
   2. Interface with access control system as specified in Section 28 1000.

a. Capable of affecting camera/video operation for selected access control system events.

F. Provide products listed, classified, and labeled as suitable for the purpose intended.

G. Electromagnetic Interference/Radio Frequency Interference (EMI/RFI) Limits: Comply with FCC requirements of 47 CFR 15, for Class B, consumer application.

2.3 VIDEO RECORDING AND VIEWING EQUIPMENT AND SOFTWARE

A. Provide video recording and viewing equipment compatible with cameras to be connected.

B. Network Video Recorders (NVRs):
1. Supports connection of network (IP) cameras.
2. Supports continuous and event-based recording.
3. Network Video Recorder:
a. Capacity: 8 channels.
b. Recording and Viewing Performance: 120 fps at 3MB resolution.
c. Storage Capacity: 6 or 12 TB. Refer to plans for size at each building.
d. Network: Single 1 Gigabit Ethernet.
e. Features:
1) Supports PTZ camera control.
2) Supports remote access via desktop and mobile device.

C. Computers:
1. Servers: Unless otherwise indicated, server hardware not furnished by video surveillance system manufacturer to be provided by Contractor as part of work of this section, meeting video surveillance system equipment manufacturer's minimum requirements.

D. Software:
1. Unless otherwise indicated, provide all software and licenses required for fully operational system for five years.

2.4 CAMERAS

A. Provide cameras and associated accessories suitable for operation under the service conditions at the installed location. Provide additional components (e.g. enclosures, heaters, blowers, etc.) as required.

B. Where not factory-installed, provide additional components (e.g. lenses, mounting accessories, etc.) as necessary for complete installation.

C. Network (IP) Cameras:
1. Refer to plans for Basis of Design (BoD), cameras other than BoD shall meet or exceed specifications of cameras listed.

2.5 ACCESSORIES

A. Camera Enclosures: Where not factory-installed, provide camera enclosures suitable for operation under service conditions at installed location.

B. Camera Mounting Supports: Where not factory installed, provide mounting supports necessary for installation.

C. Camera Poles:
1. Provide poles suitable for cameras, supports, and accessories to be installed.
2. Structural Design Criteria:
a. Wind Load: Include effective projected area (EPA) of cameras, supports, and accessories to be installed.
b. Dead Load: Include weight of proposed cameras, supports, and accessories.
3. Pole Configuration:
a. Material: Use aluminum.
b. Shape: Use round, tapered.
c. Finish: Match light poles.
d. Mounting Height: 15 FT, unless otherwise indicated.

e. Mounting: Install on 3 FT high concrete foundation, unless otherwise indicated.

4. Provide ground lug, accessible from handhole.
5. Provide the following:
   a. Top cap.
   b. Handhole.
   c. Anchor bolts with leveling nuts or leveling shims.
   d. Anchor base cover.
   e. Pole-top tenon, size as required for installed camera/bracket.
6. Products:
   a. StrongPoles, LLC; 4 Inch Square Camera Poles: www.strongpoles.com/#sle.

D. Provide components as indicated or as required for connection of video surveillance system to devices and other systems indicated.
E. Provide components as indicated or as required for system power and network connections.
F. Provide accessory controllers as indicated or as required for operator control.
G. Provide cables as indicated or as required for connections between system components.
   1. Data Cables for IP Network Connections: Unshielded twisted pair (UTP), minimum Category 5e, complying with Section 27 1000.
H. Provide accessory racks/cabinets as indicated or as required for equipment mounting.

PART 3 EXECUTION

3.1 INSTALLATION

A. Install video surveillance system in accordance with NECA 1 (general workmanship) and NECA 303.
B. Install products in accordance with manufacturer's instructions.
C. Provide required support and attachment in accordance with Section 26 0529.
D. Wiring Method: Unless otherwise indicated, use cables (not in conduit).
   1. Use suitable listed cables in wet locations, including underground raceways.
   2. Use suitable listed cables for vertical riser applications.
   3. Use listed plenum rated cables in spaces used for environmental air.
   4. Install wiring in conduit for the following:
      a. Where required for rough-in.
      b. Where required by authorities having jurisdiction.
      c. Where exposed to damage.
      d. Where installed outside the building.
      e. For exposed connections from outlet boxes to cameras.
   5. Conduit: Comply with Section 26 0533.13.
   6. Conceal all cables unless specifically indicated to be exposed.
   7. Cables in the following areas may be exposed, unless otherwise indicated:
      a. Equipment closets.
      b. Within joists in areas with no ceiling.
   8. Route exposed cables parallel or perpendicular to building structural members and surfaces.
E. Pole-Mounted Cameras:
   1. Foundation-Mounted Poles:
      a. Provide cast-in-place concrete foundations for poles as indicated; see Section 03 3000.
         1) Install anchor bolts plumb using template furnished by pole manufacturer.
         2) Position conduits to enter pole shaft.
      b. Install foundations plumb.
      c. Install poles plumb, using leveling nuts or shims as required to adjust to plumb.

d. Tighten anchor bolt nuts to manufacturer's recommended torque.
e. Install nonshrink grout between pole anchor base and concrete foundation, leaving small channel for condensation drainage.
f. Install anchor base covers or anchor bolt covers as indicated.

F. Provide grounding and bonding in accordance with Section 26 0526.
G. Identify system wiring and components in accordance with Section 26 0553.

3.2 FIELD QUALITY CONTROL

A. Prepare and start system in accordance with manufacturer's instructions.
B. Adjust cameras to provide desired field of view and produce suitable images under all service lighting conditions.
C. Program system parameters according to requirements of Owner.
D. Test for proper interface with other systems.
E. Correct defective work, adjust for proper operation, and retest until entire system complies with Contract Documents.

3.3 CLEANING

A. Clean exposed surfaces to remove dirt, paint, or other foreign material and restore to match original factory finish.

3.4 CLOSEOUT ACTIVITIES

A. Demonstration: Demonstrate proper operation of system to Owner, and correct deficiencies or make adjustments as directed.
B. Training: Train Owner's personnel on operation, adjustment, and maintenance of system.
1. Use operation and maintenance manual as training reference, supplemented with additional training materials as required.
2. Provide minimum of 8 hours of training over two separate days.
3. Instructor: Manufacturer's authorized representative.
4. Location: At project site.

3.5 MAINTENANCE

A. Provide trouble call-back service upon notification by Owner:
1. Include allowance for call-back service during normal working hours at no extra cost to Owner.
2. Owner will pay for call-back service outside of normal working hours on an hourly basis, based on actual time spent at site and not including travel time; include hourly rate and definition of normal working hours in maintenance contract.

END OF SECTION

SECTION 31 2300
EXCAVATION AND FILL

PART 1 GENERAL

1.1 SECTION INCLUDES
A. Backfilling and compacting for utilities outside the building to utility main connections.
B. Filling holes, pits, and excavations generated as a result of removal (demolition) operations.

1.2 RELATED REQUIREMENTS
A. SUDAS - Most Recent Edition
   1. Work under this section shall also be govered by the most recent edition of the Statewide Urban Design and Standards and all applicable elements shall apply.

1.3 DEFINITIONS
A. Finish Grade Elevations: Indicated on drawings.
B. Subgrade Elevations: Indicated on drawings.

1.4 REFERENCE STANDARDS
A. AASHTO M 147 - Standard Specification for Materials for Aggregate and Soil-Aggregate Subbase, Base and Surface Courses 2017.
B. AASHTO T 180 - Standard Specification for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18 in.) Drop 2018.
C. ASTM C136/C136M - Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates 2014.
D. ASTM D698 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft3 (600 kN-m/m3)) 2012, with Editorial Revision (2015).

1.5 SUBMITTALS
A. Product Data for Manufactured Fill.
B. Materials Sources: Submit name of imported materials source.
C. Fill Composition Test Reports: Results of laboratory tests on proposed and actual materials used, including manufactured fill.
D. Compaction Density Test Reports.

1.6 DELIVERY, STORAGE, AND HANDLING
A. When necessary, store materials on site in advance of need.
B. When fill materials need to be stored on site, locate stockpiles where indicated.
   1. Separate differing materials with dividers or stockpile separately to prevent intermixing.
   2. Prevent contamination.
   3. Protect stockpiles from erosion and deterioration of materials.

PART 2 PRODUCTS

2.1 FILL MATERIALS
A. General Fill: Subsoil excavated on-site.
   1. Free of lumps larger than 3 inches, rocks larger than 2 inches, and debris.
   2. Approved by Engineer prior to use.
   3. If suitable on site fill is not available, contractor is responsible for hauling it in from off-site.
B. Structural Fill - Fill Type IDOT Granular Subbase; Gradation 4121
   1. Unless otherwise noted, all areas of fill below structural elements to receive this aggregate backfill.
C. Granular Fill - Fill Type IDOT Special Backfill; Gradation 4132
   1. For use in other areas specified as grandular fill.

2.2 SOURCE QUALITY CONTROL

A. See Section 01 40 00 - Quality Requirements, for general requirements for testing and analysis of soil material.
B. Where fill materials are specified by reference to a specific standard, test and analyze samples for compliance before delivery to site.
C. If tests indicate materials do not meet specified requirements, change material and retest.

PART 3 EXECUTION

3.1 EXAMINATION

A. Identify required lines, levels, contours, and datum locations.
B. Verify areas to be filled are not compromised with surface or ground water.

3.2 PREPARATION

A. Scarify and proof roll subgrade surface to a depth of 6 inches to identify soft spots.
B. Cut out soft areas of subgrade not capable of compaction in place. Backfill with general fill.
C. Compact subgrade to density equal to or greater than requirements for subsequent fill material.
D. Until ready to fill, maintain excavations and prevent loose soil from falling into excavation.

3.3 FILLING

A. Fill to contours and elevations indicated using unfrozen materials.
B. Employ a placement method that does not disturb or damage other work.
C. Systematically fill to allow maximum time for natural settlement. Do not fill over porous, wet, frozen or spongy subgrade surfaces.
D. Maintain optimum moisture content of fill materials to attain required compaction density.
E. Slope grade away from building minimum 2 inches in 10 feet, unless noted otherwise. Make gradual grade changes. Blend slope into level areas.
F. Correct areas that are over-excavated.
    1. Other areas: Use general fill, flush to required elevation, compacted to minimum 95 percent of maximum dry density.
G. Compaction Density Unless Otherwise Specified or Indicated:
    1. Under structural elements/footings: 98 percent of maxiumum dry density. All lifts.
    2. Under paving, slabs-on-grade and similar construction: 98 percent of maximum dry density. Top lift.
    3. Under paving, slabs-on-grade and similar construction: 95 percent of maximum dry density. All other lifts.
    4. At other locations: 95 percent of maximum dry density.
H. Reshape and re-compact fills subjected to vehicular traffic.
I. Maintain temporary means and methods, as required, to remove all water while fill is being placed as required, or until directed by the Engineer. Remove and replace soils deemed unsuitable by classification and which are excessively moist due to lack of dewatering or surface water control.

3.4 FIELD QUALITY CONTROL

A. See Section 01 4533, for general requirements for field inspection and testing.
B. Soil Fill Materials:
    1. Evaluate results in relation to compaction curve determined by testing uncompacted material in accordance with ASTM D698 ("standard Proctor").
    2. If tests indicate work does not meet specified requirements, remove work, replace and retest.
    3. Frequency of Tests: minimum 1/lift.

END OF SECTION

City of RIVERSIDE

AXIOM CONSULTANTS

A RUEKERT & MIELKE COMPANY

PROJECT NAME - CITY OF RIVERSIDE SECURITY UPGRADES
PROJECT ADDRESS: 60 GREENE STREET, RIVERSIDE, IOWA 52327
ISSUE FOR CONSTRUCTION SET - JANUARY 29TH, 2025
AXIOM PROJECT #: 240139

UTILITY CONTACTS

ALLIANT ENERGY
ALLIANT ENERGY FIELD ENGINEER
800-255-4268
LOCAT_IPL@ALLIANTENERGY.COM

CITY OF RIVERSIDE
STEPHANIE THOMANN
319-648-3501
CITYCLERK@CITYOFRIVERSIDEIOWA.COM

MEDIACOM
CARL NORTON
319-594-6201
CNORTON@MEDIACOMCC.COM

PEOPLE SERVICE, INC
STEVE ROBINETTE
319-800-3281
SROBINETTE@PEOPLESERVICE.COM

MIDAMERICAN-GAS
CARSON HEMPHILL
319-341-4461
CRHEMPHILL@MIDAMERICAN.COM

WINDSTREAM COMMUNICATONS
LOCATE DESK
800-289-1901
LOCATE.DESK@WINDSTREAM.COM

SHEET INDEX

APPLICABLE CODES

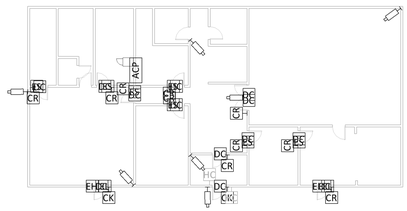
1.	INTERNATIONAL BUILDING CODE (IBC)	2003
2.	INTERNATIONAL ENERGY CONSERVATION CODE (IECC)	2012
3.	INTERNATIONAL FIRE CODE (IFC)	2006
4.	UNIFORM PLUMBING CODE (UPC)	2021
5.	ANY IOWA STATE & LOCAL COUNTY CODES AND AMENDMENTS	
6.	TO INTERNATIONAL AND UNIFORM CODES	2005

PROJECT DIRECTORY

ENGINEER/OWNER'S REP.
KEVIN MCLAUGHLIN
AXIOM CONSULTANTS, LLC
300 SOUTH CLINTON STREET, #200
IOWA CITY, IOWA 52240-3833
PHONE: 319-519-6220
KMCLAUGHLIN@AXIOM-CON.COM

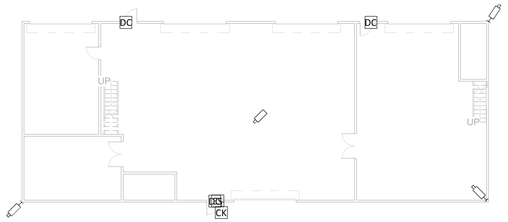
CITY CONTACT
COLE SMITH
CITY ADMINISTRATOR
60 GREENE STREET
RIVERSIDE, IOWA 52327
PHONE: 319-648-3501
CITYADMIN@RIVERSIDEIOWA.GOV

T-101



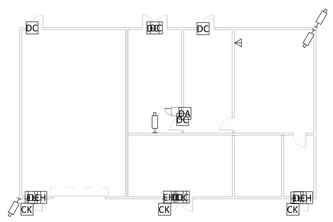
CITY HALL 60 GREENE ST — NTS — 1/000

T-103

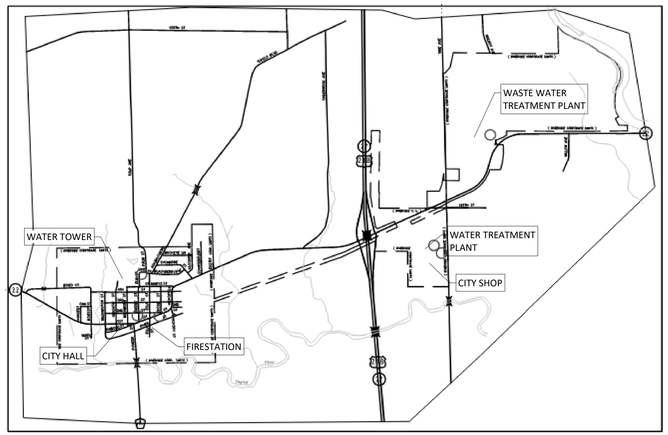


CITY SHOP 1197 VINE AVE — 1/16" = 1'-0" — 2/000

T-104

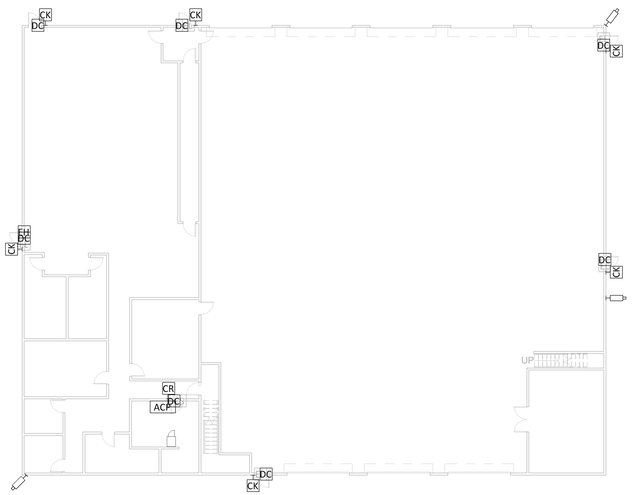


WASTEWATER TREATMENT PLANT 1195 VINE AVE — 1/16" = 1'-0" — 3/000



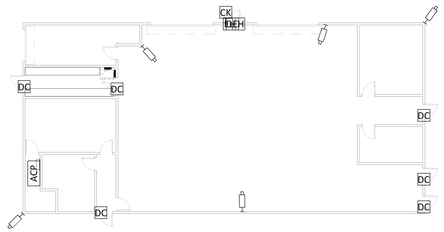
OVERALL PROJECT LOCATION

T-102



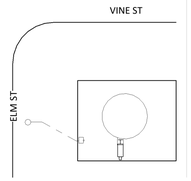
FIRE STATION 271 W FIRST ST — NTS — 4/000

T-105



WATER TREATMENT PLANT 3126 IA-22 — 1/16" = 1'-0" — 5/000

T-106



WATER TOWER 475 ELM ST — 1/16" = 1'-0" — 6/000

INDIVIDUAL PLAN OVERVIEW

IOWA 811 ONE CALL SM

LICENSED PROFESSIONAL ENGINEER
KEVIN D. MCLAUGHLIN
29142
IOWA

I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA.

02.11.2025
KEVIN D. MCLAUGHLIN, P.E. — DATE
LICENSE NUMBER 29142.

MY LICENSE RENEWAL DATE IS DECEMBER 31, 2025.

PAGES OR SHEETS COVERED BY THIS SEAL: ALL 'T' SHEETS

PROJECT DESIGN INTENT:

1. THE INTENT OF THIS PROJECT IS TO PROVIDE THE CITY OF RIVERSIDE WITH AN ACCESS CONTROL AND SECURITY SYSTEM TO MONITOR SIX SITES AS SHOWN ON THE COVER PAGE AND THROUGHOUT THESE DOCUMENTS.
2. THE INTENT OF THESE PLANS IS TO PROVIDE GENERAL GUIDELINES FOR INTERESTED PARTIES AS EACH VENDOR WILL HAVE DIFFERENT COMPONENTS TO ACHIEVE THE SAME OUTCOME. THE TWO SYSTEMS SHALL WORK IN CONJUNCTION WITH ONE ANOTHER AND BE ABLE TO BE MONITORED ON EITHER THE ACCESS CONTROL OR CAMERA SOFTWARE PLATFORM.
3. PROVIDE SEPARATE BIDS FOR THE SYSTEMS SHOWN AS OUTLINED BELOW AND AS DESCRIBED IN SPECIFICATION 28-1000/28-2000:
   - A. **BASE BID:** PROVIDE A CLOUD BASED SYSTEM FOR BOTH ACCESS CONTROL AND SECURITY CAMERAS. THIS SHALL INCLUDE BUT NOT LIMITED TO:
     - a. ACCESS CONTROL:
       - CARD READERS AND KEYPADS (HARDWIRED)
       - DOOR HARDWARE IE. ELECTRIC STRIKES, ELECTRIFIED DOOR TRANSFER HINGES, RETRACTION KITS, DOOR CONTACTS, HANDLES ETC.
       - ACCESS CONTROL PANELS, I/O BOARDS, MONITORING DEVICES AND ALL ASSOCIATED CONDUIT AND CABLING.
       - MOTORIZED GATE, GOOSENECK PEDESTAL, NEMA-3R ENCLOSURE, MEDIA CONVERTER, FIBER, ELECTRICAL CONDUCTORS ETC.
       - ALL LICENSES FOR FIVE YEARS
     - b. SECURITY CAMERAS:
       - CAMERAS, MOUNTS AND ASSOCIATED CONDUIT AND CAT6 CABLING
       - NETWORK SWITCH, UPS AND DATA CABINET
       - ALL LICENSES FOR FIVE YEARS
   - B. **ALTERNATE BID:** PROVIDE AN ON PREMISES SYSTEM IN LIEU OF ANY DISCPRENCIES FOR BOTH ACCESS CONTROL AND SECURITY CAMERAS. THIS SHALL INCLUDE BUT IS NOT LIMITED TO:
     - a. ACCESS CONTROL:
       - CARD READERS AND KEYPADS (HARDWIRED)
       - DOOR HARDWARE IE. ELECTRIC STRIKES, ELECTRIFIED DOOR TRANSFER HINGES, RETRACTION KITS, DOOR CONTACTS, HANDLES ETC.
       - ACCESS CONTROL PANELS, HEAD-END SERVER, I/O BOARDS, MONITORING DEVICES AND ALL ASSOCIATED CONDUIT AND CABLING.
       - MOTORIZED GATE, GOOSENECK PEDESTAL, NEMA-3R ENCLOSURE, MEDIA CONVERTER, FIBER, ELECTRICAL CONDUCTORS ETC.
       - ALL LICENSES FOR FIVE YEARS
     - b. SECURITY CAMERAS:
       - CAMERAS, MOUNTS AND ASSOCIATED CONDUIT AND CAT6 CABLING
       - NETWORK VIDEO RECORDER, UPS AND DATA CABINET
       - ALL LICENSES FOR FIVE YEARS

PRIOR TO STARTING WORK, CONTRACTOR SHALL VERIFY EXISTING DOOR HARDWARE AND WORK WITH DOOR MANUFACTURER TO PROVIDE THE NECESSARY DOOR HARDWARE TO RETROFIT EXISTING DOORS TO ALLOW FOR ACCESS CONTROL. PROVIDE THE FOLLOWING FOR EXISTING DOORS:

1. DOORS WITH PANIC HARDWARE: ELECTRIFIED HINGE, RETROFIT LATCH RETRACTION KIT, CARD READER OR KEYPAD, DOOR POSITION SENSOR AND ASSOCIATED CONDUIT AND CABLING. DOORS SHALL ALLOW EGRESS THROUGH PANIC HARDWARE.
2. DOORS WITH STANDARD LOCKSET: ELECTRIC STRIKE, CYLINDER, KEYWAYS, LOCKSET, LATCH, DOOR STRIKE, LEVER AND ASSOCIATED CONDUIT AND CABLING. DOORS SHALL ALLOW EGRESS THROUGH LEVER.

GENERAL TECHNOLOGY NOTES:

1. VERIFY ALL SITE CONDITIONS PRIOR TO STARTING WORK. NOTIFY EoR OF ANY DISCPRENCIES.
2. COORDINATE ALL CONDUIT ROUTING WITH BUILDING STRUCTURE AND OTHER TRADES PRIOR TO INSTALLATION TO ALLOW FOR PROPER CLEARANCE SPACE.
3. EQUIPMENT SHOWN IN THE GENERAL AREA WHERE THEY WILL BE INSTALLED. COORDINATE WITH OWNER FOR FINAL LOCATION.
4. PROVIDE CAT6 CABLE TO EACH SECURITY CAMERA. ALL CAMERAS TO BE MOUNTED AT 9'-0" AFF UNLESS OTHERWISE NOTED.
   - A. PRECISE CAMERA VIEW RANGE AND POSITIONING TO BE DONE BY INSTALLER AND VERIFIED WITH OWNER PRIOR TO CLOSEOUT.
5. THE DIVISION 26 CONTRACTOR SHALL PROVIDE AND INSTALL ALL TELECOM CONDUITS TO ACCESSIBLE CEILING SPACE (THEY SHALL NOT BE TERMINATED ABOVE HARD LIDS OR IN EXPOSED AREAS). UNLESS INSTRUCTED OTHERWISE, STUB ALL TELECOM CONDUITS TO THE ACCESSIBLE CEILING SPACE IN THE SAME ROOM AS THE OPENING.
6. COORDINATE ROUTING OF RACEWAY AND EQUIPMENT TO MAINTAIN ACCESS TO FILTERS, MOTORS, ELECTRICAL EQUIPMENT, AND CONTROLS. IN NO CASE SHALL RACEWAY, CABLING BUNDLES, OR EQUIPMENT PASS DIRECTLY OVER ELECTRICAL PANELS, DISCONNECTS OR RESTRICT ACCESS TO ANY ELECTRICAL EQUIPMENT INCLUDING JUNCTION BOXES.
7. THE DIVISION 26 CONTRACTOR SHALL VERIFY ALL QUANTITIES OF ASSOCIATED EQUIPMENT AND COMPONENTS.
8. THE DIVISION 27 CONTRACTOR SHALL USE HOOK AND LOOP FASTENERS ON CABLING EXCLUSIVELY, NO TIE WRAPS. EXCEPTION: TIE WRAPS MAY BE USED LOOSELY/TEMPORARILY, BUT SHALL BE REMOVED AND REPLACED WITH HOOK AND LOOP FASTENERS FOR COMPLETION.
9. THE MAXIMUM DISTANCE BETWEEN ALL J HOOKS SHALL BE FIVE FEET AND SIZED TO HAVE AT LEAST 50% CAPACITY AVAILABLE FOR FUTURE GROWTH. CONTRACTOR SHALL NOT FASTEN CABLING TO PIPING, DUCTWORK, CONDUITS, OR ANYTHING OTHER THAN CONTRACTOR INSTALLED J HOOKS OR CABLE TRAY SUPPORTED FROM STRUCTURE. CONTRACTOR SHALL NOT LAY CABLE OVER PIPING, DUCTWORK, CONDUITS, CEILING GRID/TILES, AND ANY OTHER BUILDING STRUCTURE ELEMENT OR BUILDING SUPPORT SYSTEM DEVICE. USE LOW VOLTAGE PATHWAY ONLY.
10. ALL TELECOM CABLING IN FINISHED SPACES IS TO BE ROUTED CONCEALED IN WALLS, UNLESS SPECIFICALLY NOTED OTHERWISE. ALL EXPOSED CABLING AND CABLING BEHIND INACCESSIBLE CONSTRUCTION (SUCH AS IN WALLS AND ABOVE DRYWALL CEILINGS) SHALL BE ROUTED IN CONDUIT WHICH IS PROVIDED AND INSTALLED BY THE DIVISION 26 CONTRACTOR. ALL WALL PENETRATIONS SHALL BE SLEEVED WITH CONDUIT.
11. THE CONTRACTOR SHALL NOT PULL ANY CABLING THROUGH CONDUITS THAT DO NOT HAVE THE REQUIRED BUSHINGS INSTALLED. CABLE DAMAGED DUE TO BEING INSTALLED THROUGH CONDUITS WITH NO BUSHINGS SHALL BE REPLACED BY THE CONTRACTOR AT NO CHARGE TO THE OWNER.
12. ALL DIV.27 AND DIV.28 EXPOSED LOCATIONS SHALL BE ROUTED IN CONDUIT WITH BUSHINGS. ALL SURFACE MOUNTED PATHWAY SHALL BE PAINTED TO MATCH SURFACES.

VIDEO SURVEILLANCE NOTES:

1. DESIGN BASIS: VIDEO SURVEILLANCE SYSTEM IS BASED OFF OF MOTOROLA'S AVIIGILON EQUIPMENT AND SOFTWARE WITH 5 YEAR LICENSE AWA-CLD-5YR. ALL SUBSTITUTION REQUEST MUST BE RECEIVED AT LEAST ONE WEEK PRIOR TO BID DATE. FOR MANUFACTURERS NOT APPROVED/LISTED ABOVE, THE OWNER WILL REQUEST A DEMONSTRATION OF THE SYSTEM. MANUFACTURER'S WANTING TO BE APPROVED FOR THIS PROJECT MUST PROVIDE A DEMONSTRATION TO OWNER FOR APPROVAL PRIOR TO BID DATE.THE OWNER AND ENGINEER WILL REVIEW SUBSTITUTION REQUEST BASED ON COST, FUNCTIONALITY, MAINTENANCE, LICENSING AGREEMENTS ETC.
2. THE SURVEILLANCE SYSTEM SHOWN IS BASED OFF OF A CLOUD STORAGE SOLUTION. CONTRACTOR SHALL INCREASE SIZE OF DATA CABINET AS REQUIRED IF AN ON PREMISES SOLUTION IS SELECTED.
3. MODEL NUMBERS SHOWN ARE A BASIS OF DESIGN, CONTRACTOR SHALL WORK WITH SELECTED VIDEO SURVEILLANCE VENDOR FOR FINAL EQUIPMENT TO BE PROVIDED. PROVIDE ALL WIRING, DEVICES, SOFTWARE, LICENSES AND HEAD END EQUIPMENT FOR A COMPLETE AND OPERATIONAL SYSTEM.
4. REFER TO SPECIFICATIONS FOR SURVEILLANCE SYSTEM REQUIREMENTS. SURVEILLANCE SYSTEM SHALL BE PROVIDED WITH ITS OWN MONITORING SOFTWARE AND SHALL BE ABLE TO INTEGRATE ACCESS CONTROL DATA SO THAT BOTH SURVEILLANCE AND ACCESS CONTROL CAN BE MONITORED AND CONTROLLED THROUGH A SINGLE APPLICATION.
5. PROVIDE ALL MOUNTING BRACKETS, SUPPORTS AND ENCLOSURES FOR EACH CAMERA SHOWN.
6. AWARDED SURVEILLANCE VENDOR SHALL PROVIDE A CAMERA LAYOUT AND COVERAGE MAP SO OWNER AND ENGINEER CAN REVIEW COVERAGE PRIOR TO APPROVAL.
7. ALL CAMERAS SHALL BE DIGITAL AND POWERED VIA PoE THROUGH CAT6 CABLING.
8. PROVIDE 20A/1P BREAKER IN EXISITNG PANEL AND EXTEND CIRCUIT TO DATA CABINET.

ACCESS CONTROL NOTES:

1. DESIGN BASIS: ACCESS CONTROL SYSTEM IS BASED ON MOTORLA'S OPEN-PATH EQUIPMENT AND SOFTWARE WITH 5 YEAR LICENSE SW-PRM-100. ALL SUBSTITUTION REQUEST MUST BE RECEIVED AT LEAST ONE WEEK PRIOR TO BID DATE. FOR MANUFACTURERS NOT APPROVED/LISTED ABOVE, THE OWNER WILL REQUEST A DEMONSTRATION OF THE SYSTEM. MANUFACTURER'S WANTING TO BE APPROVED FOR THIS PROJECT MUST PROVIDE A DEMONSTRATION TO OWNER FOR APPROVAL PRIOR TO BID DATE. THE OWNER AND ENGINEER WILL REVIEW SUBSTITUTION REQUEST BASED ON COST, FUNCTIONALITY, MAINTENANCE, LICENSING AGREEMENTS ETC.
2. THE ACCESS CONTROL SYSTEM SHOWN IS BASED OFF A CLOUD STORAGE OR OFF PREMISES SOLUTION AS THE BASE BID. CONTRACTOR SHALL PROVIDE ALL COMPONENTS FOR AN ON PREMISES SOLUTION IF SELECTED IF ALTERNATE IS SELECTED BY OWNER. CONTRACTOR SHALL INCREASE SIZE OF DATA CABINET AS REQUIRED IF ALTERNATE IS SELECTED.
3. PRIOR TO STARTING WORK, CONTRACTOR SHALL VERIFY EXISTING DOOR HARDWARE AND WORK WITH DOOR MANUFACTURER TO PROVIDE THE NECESSARY DOOR HARDWARE TO RETROFIT EXISTING DOORS TO ALLOW FOR ACCESS CONTROL. PROVIDE THE FOLLOWING FOR EXISTING DOORS:
   - A. DOORS WITH PANIC HARDWARE: ELECTRIFIED HINGE, RETROFIT LATCH RETRACTION KIT, CARD READER OR KEYPAD, DOOR POSITION SENSOR AND ASSOCIATED CONDUIT AND CABLING. DOORS SHALL ALLOW EGRESS THROUGH PANIC HARDWARE.
   - B. DOORS WITH STANDARD LOCKSET: ELECTRIC STRIKE, CYLINDER, KEYWAYS, LOCKSET, LATCH, DOOR STRIKE, LEVER AND ASSOCIATED CONDUIT AND CABLING. DOORS SHALL ALLOW EGRESS THROUGH LEVER.
4. MODEL NUMBERS SHOWN ARE A BASIS OF DESIGN, CONTRACTOR SHALL WORK WITH SELECTED ACCESS CONTROL VENDOR FOR FINAL EQUIPMENT TO BE PROVIDED. PROVIDE ALL WIRING, DEVICES, SOFTWARE AND HEAD-END EQUIPMENT FOR A COMPLETE AND OPERATIONAL ACCESS CONTROL SYSTEM.
5. REFER TO SPECIFICATION FOR ACCESS CONTROL REQUIREMENTS. ACCESS CONTROL SHALL WORK WITH SELECTED SURVEILLANCE SYSTEM, BOTH ACCESS CONTROL AND SURVEILLANCE SHALL BE ABLE TO BE CONTROLLED AND MONITORED THROUGH A SINGLE APPLICATION.
6. ALL ACCESS CONTROL DEVICES SHALL BE HARD-WIRED. NO WIRELESS DEVICES SHALL BE USED ON THIS PROJECT.
7. DOORS WITH HANDICAP PUSH BUTTONS DESIGNATED TO HAVE A CARD READER SHALL BE INEGRATED INTO ACCESS CONTROL SYSTEM.
8. PROVIDE 20A/1P BREAKER IN EXISTING PANEL AND EXTEND CIRCUIT TO ACCESS CONTROL PANEL.

MOTORIZED GATE NOTES:

1. MOTORIZED GATES ARE DELEGATED DESIGN. CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF MOTORIZED SLIDING GATE SYSTEM. CONTRACTOR SHALL WORK WITH GATE MANUFACTURER TO SELECT A GATE THAT MEETS THE REQUIREMENTS OF THE SPECIFICATION. SIZE OF GATE SHALL BE DETERMINED BY GATE MANUFACTURER, THE APPROXIMATE WIDTH OF THE ROADWAY IS 28 FEET.
2. PRIOR TO STARTING WORK CONTRACTOR SHALL CONFIRM SITE DIMENSIONS, TOPOGRAPHY AND ANY OBSTACLES THAT MAY IMPACT INSTALLATION.
3. PERFORM ANY NECESSARY EXCAVATION OR FOUNDATION WORK FOR THE INSTALLATION OF GATE TRACKS, POST AND SUPPORTING INFRASTRUCTURE. ENSURE AREA IS CLEARED OF DEBRIS OR OBSTRUCTIONS THAT COULD INTERFERE WITH GATE OPERATION.
4. PROVIDE ALL NECESSARY TOOLS, EQUIPMENT AND MATERIALS FOR SITE PREPARATION.
5. CONTRACTOR SHALL PROVIDE ALL MATERIALS REQUIRED FOR THE FABRICATION AND INSTALLATION OF THE SLIDING GATE, INCLUDING POLES, FOUNDATIONS, FENCING, GATE PANEL, MOTOR, CONTROL SYSTEM, SENSORS, TRACK, WHEELS POST AND ANY OTHER RELATED COMPONENTS. IF THERE IS A GAP IN FENCING BECAUSE OF THE INSTALLATION OF THE GATE, THE CONTRACTOR SHALL INSTALL FENCING BETWEEN POSTS TO SECURE THE SITE.
6. INSTALL ALL ELECTRICAL AND COMMUNICATIONS WIRING REQUIRED FOR PROPER OPERATION OF GATE AND ACCESS CONTROL SYSTEM.
7. INSTALL AND INTEGRATE ALL SENSORS, SAFETY EDGES AND EMERGENCY STOP FUNCTIONS. POWER FOR MOTORIZED GATE SHALL BE FED FROM NEMA-4X CABINET LOCATED ON CAMERA POLE. THE GATE SHALL OPERATE IN CONJUNCTION WITH THE ACCESS CONTROL SYSTEM. PROVIDE ALL EQUIPMENT AND DEVICES FOR INTEGRATION WITH ACCESS CONTROL SYSTEM. PROVIDE ALL WIRING BETWEEN GATE CONTROLLER AND ACCESS CONTROL PANEL.
8. CONDUCT TESTING OF MOTORIZED GATE AND ACCESS CONTROL SYSTEM AS WELL AS SAFETY SYSTEMS OF GATE PRIOR TO TURNING OVER TO OWNER.

TECHNOLOGY SYMBOL LEGEND

AUDIO VISUAL SYMBOLS

DEVICE SYMBOLS	DESCRIPTION
S X	SPEAKER OUTLET - CEILING MOUNTED X - INDICATED PLAN MARK OF SPEAKER DEVICE, SEE AV SCHEDULE
S X	SPEAKER OUTLET - CEILING MOUNTED X - INDICATED PLAN MARK OF SPEAKER DEVICE, SEE AV SCHEDULE
M	MICROPHONE OUTLET - CEILING/FLOOR MOUNTED (XLR ONLY)
M X	MICROPHONE OUTLET - WALL MOUNTED (XLR ONLY)
V	VOLUME CONTROL - WALL MOUNTED
P	PROJECTOR - CEILING MOUNTED
P	PROJECTOR - WALL MOUNTED
M	PROJECTION SCREEN - CEILING MOUNTED M - INDICATES MOTORIZED SCREEN
M	PROJECTION SCREEN - WALL MOUNTED M - INDICATES MOTORIZED SCREEN
A/V	AUDIO VIDEO DEVICE
A/V	AUDIO VIDEO DEVICE - WALL MOUNTED
HDMI	HDMI/USB WALL PLATE FOR CLASSROOM PROJECTOR SYSTEMS

DEVICE SYMBOLS	TECHNOLOGY SYMBOLS
C X	CLOCK - CEILING MOUNTED (SEE CLOCK SCHEDULE) X- INDICATES PLAN MARK OF CLOCK DEVICE
C X	CLOCK - WALL MOUNTED (SEE CLOCK SCHEDULE) A - INDICATES 12" SINGLE FACE CLOCK B - INDICATES 12" DUAL FACE CLOCK C - INDICATES 16" SINGLE FACE CLOCK
I X	INTERCOM DEVICE - WALL MOUNTED X - INDICATES PLAN MARK OF INTERCOM DEVICE, SEE INTERCOM SCHEDULE
I X	INTERCOM DEVICE - WALL MOUNTED X - INDICATES PLAN MARK OF INTERCOM DEVICE, SEE INTERCOM SCHEDULE
I X	INTERCOM SPEAKER - CEILING MOUNTED X - INDICATES PLAN MARK OF INTERCOM DEVICE, SEE INTERCOM SCHEDULE
I X	INTERCOM SPEAKER - WALL MOUNTED X - INDICATES PLAN MARK OF INTERCOM DEVICE, SEE INTERCOM SCHEDULE
R	RADIO FREQUENCY REPEATER - SURFACE MOUNTED
R	RADIO FREQUENCY REPEATER - WALL MOUNTED
V	VAPE DETECTOR - CEILING MOUNTED
V	VAPE DETECTOR - WALL MOUNTED
A	DAS COVERAGE UNITS
	SPECIAL CABINET AS NOTED - SURFACE MOUNT
	SPECIAL CABINET AS NOTED - RECESSED MOUNT

TELECOM SYMBOLS

DEVICE SYMBOLS	DESCRIPTION
WALL CEILING FLOOR	DATA OUTLET
	TELEPHONE OUTLET
	DATA/TELEPHONE OUTLET
	OUTLET MODIFIERS: ##": HEIGHT AFF OC AC: ABOVE COUNTER
WAP	WIRELESS ACCESS POINT
WAP	WIRELESS ACCESS POINT
TV	TV OUTLET
	INFORMATION JACK FOR VOICE OR DATA USE, MATCH RECEPTACLE HEIGHT UNLESS OTHEREWISE NOTED
	-INDICATED DUAL JACK
	-INDICATES QUAD JACK

DEVICE SYMBOLS	SECURITY / ACCESS CONTROL SYMBOLS
	CEILING MOUNT SECURITY CAMERA
	WALL MOUNT SECURITY CAMERA
CR	CARD READER
CR	CARD READER WIRELESS
CRM	CARD READER, MULLION
CR L	CARD READER, LONG RANGE READER
A V	VIDEO DOOR STATION
CK	CARD READER WITH KEYPAD
TV CC	CLOSED CIRCUIT TV OUTLET
DC	DOOR CONTACT
DC	DOOR CONTACT WIRELESS
ES	ELECTRIC STRIKE
ES	ELECTRIC STRIKE WIRELESS
EL	ELECTRIC LOCK
IC	INTERCOM
ML	MAGNETIC LOCK
DA	DOOR ALARM
RX	REQUEST TO EXIT BUTTON
REX	REQUEST TO EXIT SENSOR
MD	MOTION DETECTOR
XXX	SECURITY CONTROL UNIT SCP: SECURITY CONTROL PANEL SPS: SECURITY POWER SUPPLY UNIT ACP: ACCESS CONTROL PANEL
EH	ELECTRIC HINGE
L	LOCKOUT BUTTON, LOCK ALL ELECTRIFIED DOORS
D A	VIDEO DOOR DESKTOP STATION (AI PHONE)
O	BUZZ DOOR OPEN BUTTON
P	PANIC BUTTON

DEVICE SYMBOLS	CONSTRUCTION PHASING
	(TYPICAL ALL SYMBOLS AND EQUIPMENT)
	EXISTING TO REMAIN
	EXISTING TO BE DEMOLISHED
	NEW
	EXISTING TO BE DEMOLISHED

MISCELLANEOUS

	AREA NOT IN CONTRACT
#	KEYNOTE
X / X-XXX	CALLOUT: TOP VALUE: DETAIL NUMBER ON SHEET BOTTOM VALUE: SHEET NUMBER OF DETAIL
ROOM XXX	ROOM NAME AND NUMBER

FIRE ALARM SYMBOLS

DEVICE SYMBOLS	DESCRIPTION
F	MANUAL PULL STATION
F	SPEAKER, FIRE, WALL
F	HORN, CEILING, FIRE
	STROBE, WALL, FIRE
A	STROBE, WALL, AMBER
	STROBE, CEILING, FIRE
A	STROBE, CEILING, AMBER
	SPEAKER/STROBE, WALL, FIRE
A	SPEAKER/STROBE, WALL, AMBER
	SPEAKER/STROBE, CEILING, FIRE
A	SPEAKER/STROBE, CEILING, AMBER
	REMOTE INDICATOR W/ TEST SWITCH, WALL
	REMOTE INDICATE W/ TEST SWITCH, CEILING
	SMOKE DETECTOR
	HEAT DETECTOR
S R	FAN SHUT DOWN / CONTROL RELAY
CO	CARBON MONOXIDE DETECTOR
T R	BEAM DETECTOR T: TRANSMITTER R: RECEIVER
CO	COMBINATION DETECTOR (UP TO THREE)
	DUCT SMOKE DETECTOR
	SMOKE DAMPER
DH	DOOR HOLDER
DCL	DOOR CLOSER
	AREA OF REFUGE (2-WAY COMM)
XXX	ADDRESSABLE MODULE AIM: ADDRESSABLE INPUT MODULE AOM:ADDRESSABLE OUTPUT CONTROL MODULE AIO: ADDRESSABLE INPUT/OUTPUT MODULE
XXXX	FIRE ALARM CONTROL UNIT EVAC: VOICE EVACUATION CONTROL PANEL FAA: FIRE ALARM ANNUNCIATOR FACP: FIRE ALARM CONTROL PANEL FATC: FIRE ALARM TERMINAL CABINET NACP: NOTIFICATION APPLIANCE CIRCUIT PANEL FAMN: FIRE ALARM MASS NOTIFICATION CONTROL PANEL
XX	SUPERVISORY OR INTERFACE DEVICE PIV: POST INDICATOR VALVE SUPERVISORY PS: PRESSURE SWITCH R: NON-ADDRESSABLE RELAY VS: VALVE SUPERVISORY SWITCH WF: WATER FLOW SWITCH

NOT ALL DEVICES SHOWN MAY BE REQUIRED. WALL MOUNT MAY BE USED IN PLACE OF CEILING AS NEEDED.

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CITY OF RIVERSIDE SECURITY UPGRADES
RIVERSIDE, IA

ISSUED FOR
BID

DATE	Issue Date
DESCRIPTION	DATE

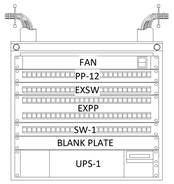
DRAWN BY	CDK
CHECKED BY	KDM
PROJECT NO.	240139

SHEET NAME
TECHNOLOGY SYMBOLS

T000

GENERAL NOTES (CITY HALL):

1. EXISTING CAT6 CABLING, TELEPHONE CABLING, PUNCH DOWN BLOCK AND MITEL SYSTEM TO WALL IN I.T. ROOM. RE-TERMINATE PHONE CABLINE IN PUNCH DOWN BLOCK. REMOVE ANY UNUSED TELEPHONE AND CAT6 CABLING.
2. RELOCATED CAT6 CABLING MAY BE USED FOR SURVEILLANCE CAMERAS. THE LOCATION OF THE FAR END OF CAT6 CABLING IS UNKNOWN AND WILL REQUIRE INVESTIGATION TO DETERMINE IF IT CAN BE RE-USED. ASSUME ALL NEW CAT6 CABLING TO CAMERAS FOR BIDDING PURPOSES.
3. IF ALTERNATE #1 SOLUTION IS SELECTED, PROVIDE HEAD-END SERVER FOR ACCESS CONTROL SYSTEM AT THIS BUILDING. SERVER SHALL BE SIZED AND PROVIDED BY ACCESS CONTROL VENDOR. OWNER SHALL WORK WITH THEIR I.T. CONSULTANT TO SET UP A VIRTUAL NETWORK BETWEEN SITES SO THAT ALL CAMERAS AND ACCESS CONTROL EQUIPMENT CAN BE VIEWED FROM ANY LOCATION ON ACCESS CONTROL SOFTWARE/VIDEO SURVEILLANCE SOFTWARE OR APPLICATION.
4. PROVIDE ACCESS CONTROL WIRING TO EACH DOOR PROVIDED WITH CARD READER. BASIS OF DESIGN: BELDEN 438AFJ.
5. PROVIDE 2-#18 TO EACH PANIC BUTTON AND DOOR RELEASE SWITCH.
6. FOR LOCATIONS OF EQUIPMENT THAT REQUIRE CUTTING OF DRYWALL OR OTHER WALL MATERIAL, CONTRACTOR SHALL PATCH WALL AND PAINT OR RE-FINISH TO MATCH EXISTING CONDITIONS.
7. CONTRACTOR SHALL SEAL ALL PENETRATIONS THROUGH BUILDING ENVELOPE TO MAINTAIN FIRE RATING.

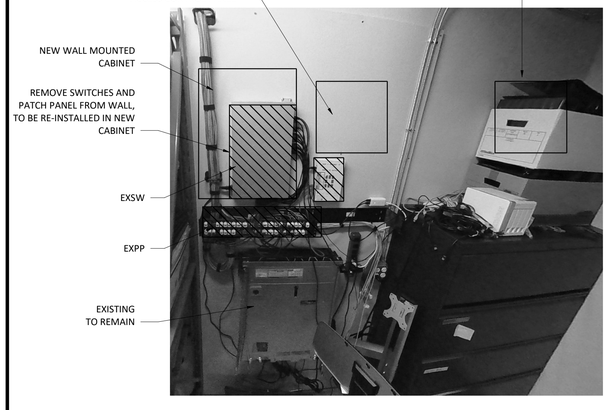


NOTE:
1. THE DATA RACK ELEVATION IS INTENDED TO DISPLAY THE TYPICAL EQUIPMENT LAYOUT.
2. THE CONTRACTOR SHALL FOLLOW THE TYPICAL LAYOUT DURING INSTALLATION. IF FOR ANY REASON THERE IS NEED TO MODIFY THE LAYOUT THE CONTRACTOR SHALL CONFIRM WITH DESIGN PROFESSIONAL AND OR THE OWNER PRIOR TO MAKING ANY CHANGES.
3. INCLUDED DATA SCHEDULE TO BE SHOWN ON INSIDE OF DATA CABINET DOOR.

9RU MDF DATA RACK ELEVATION DETAIL — NTS — 1 / T-101

SQUARE-D PANEL. PROVIDE NEW (2) 20A/1P BREAKER IN SPARE SLOT
PROVIDE TWO SETS OF 3/4" CONDUIT AND 2-#12 & 1'-#12 GND TO ACCESS CONTROL PANEL AND DATA CABINET. LABLE NEW CIRCUIT ON PANEL SCHEDULE

EXISTING ELECTRICAL PANEL



EXISTING PATCH PANEL AND SWITCH - NEW CABINET LOCATION

ACCESS CONTROL DOOR SCHEDULE BASIS OF DESIGN C.H.

LOCATION	DOOR	DESCRIPTION	MODEL INFO
MAIN ENTRANCE	D-1	CARD READER / KEYPAD	AVIGILON: OP-RKP-STD
MAIN ENTRANCE	D-1	DOOR CONTACT	SCHLAGE: 679-05HM
MAIN ENTRANCE	D-1	HANDICAP PUSH BUTTON	EXISTING
MAIN ENTRANCE	D-1	HANDICAP PUSH BUTTON	EXISTING
MAIN ENTRANCE	D-1	ELECTRIFIED LATCH RETRACTION KIT	VON DUPRIN: QEL
MAIN ENTRANCE	D-1	ELECTRIFIED HINGE	STANLEY: CECB179-66 4-1/2-1/2 26D
VESTIBULE [100]	D-2	CARD READER	AVIGILON: OP-R2X-STD
VESTIBULE [100]	D-2	DOOR CONTACT	SCHLAGE: 679-05HM
VESTIBULE [100]	D-2	DOOR RELEASE PUSH BUTTON	ALARM CONTROLS: TS-2
VESTIBULE [100]	D-2	DOOR RELEASE PUSH BUTTON	ALARM CONTROLS: TS-2
VESTIBULE [100]	D-2	ELECTRIFIED LATCH RETRACTION KIT	VON DUPRIN: QEL
VESTIBULE [100]	D-2	ELECTRIFIED HINGE	STANLEY: CECB179-66 4-1/2-1/2 26D
OFFICE 101	D-3	CARD READER	AVIGILON: OP-R2X-STD
OFFICE [101]	D-3	DOOR CONTACT	SCHLAGE: 679-05HM
ADMIN ENTRANCE	D-3	ELECTRIC STRIKE	VON DUPRIN: 621132
COUNCIL CHAMBERS [105]	D-4	CARD READER	AVIGILON: OP-R2X-STD
COUNCIL CHAMBERS [105]	D-4	DOOR CONTACT	SCHLAGE: 679-05HM
COUNCIL CHAMBERS [105]	D-4	ELECTRIFIED LATCH RETRACTION KIT	VON DUPRIN: QEL
COUNCIL CHAMBERS [105]	D-4	ELECTRIFIED HINGE	STANLEY: CECB179-66 4-1/2-1/2 26D
COUNCIL CHAMBERS [105]	D-4	DOOR CONTACT	SCHLAGE: 679-05HM
RECEPTION OFFICE [110]	D-5	CARD READER	AVIGILON: OP-R2X-STD
RECEPTION OFFICE [110]	D-5	DOOR CONTACT	SCHLAGE: 679-05HM
RECEPTION OFFICE [110]	D-5	ELECTRIC STRIKE	VON DUPRIN: 621132
STORAGE [108]	D-6	CARD READER	AVIGILON: OP-R2X-STD

ACCESS CONTROL DOOR SCHEDULE BASIS OF DESIGN C.H.

LOCATION	DOOR	DESCRIPTION	MODEL INFO
STORAGE [108]	D-6	DOOR CONTACT	SCHLAGE: 679-05HM
STORAGE [108]	D-6	ELECTRIC STRIKE	VON DUPRIN: 621132
PUBLIC ENTRANCE [111]	D-7	CARD READER / KEYPAD	AVIGILON: OP-RKP-STD
PUBLIC ENTRANCE [111]	D-7	DOOR CONTACT	SCHLAGE: 679-05HM
PUBLIC ENTRANCE [111]	D-7	ELECTRIFIED LATCH RETRACTION KIT	VON DUPRIN: QEL
PUBLIC ENTRANCE [111]	D-7	ELECTRIFIED HINGE	STANLEY: CECB179-66 4-1/2-1/2 26D
UTILITY [114]	D-8	CARD READER	AVIGILON: OP-R2X-STD
UTILITY [114]	D-8	DOOR CONTACT	SCHLAGE: 679-05HM
UTILITY [114]	D-8	ELECTRIC STRIKE	VON DUPRIN: 621132
UTILITY [116]	D-9	CARD READER	AVIGILON: OP-R2X-STD
UTILITY [116]	D-9	DOOR CONTACT	SCHLAGE: 679-05HM
UTILITY [116]	D-9	ELECTRIC STRIKE	VON DUPRIN: 621132
ADMIN ENTRANCE	D-10	CARD READER	AVIGILON: OP-R2X-STD
ADMIN ENTRANCE	D-10	ELECTRIFIED LATCH RETRACTION KIT	VON DUPRIN: QEL
ADMIN ENTRANCE	D-10	DOOR CONTACT	SCHLAGE: 679-05HM
ADMIN ENTRANCE	D-10	ELECTRIFIED HINGE	STANLEY: CECB179-66 4-1/2-1/2 26D
CITY ADMIN [102]	D-11	CARD READER	AVIGILON: OP-R2X-STD
CITY ADMIN [102]	D-11	DOOR CONTACT	SCHLAGE: 679-05HM
CITY ADMIN [102]	D-11	ELECTRIC STRIKE	VON DUPRIN: 621132
RIVERBOAT ROOM [111]	D-12	CARD READER	AVIGILON: OP-R2X-STD
RIVERBOAT ROOM [111]	D-12	ELECTRIC STRIKE	VON DUPRIN: 621132
RIVERBOAT ROOM [111]	D-12	DOOR CONTACT	SCHLAGE: 679-05HM
VESTIBULE [100]	N/A	PANIC BUTTON WALL	ALARM CONTROLS: PBM-4-3-L1
CITY ADMIN [102]	N/A	PANIC BUTTON WALL	ALARM CONTROLS: PBM-4-3-L1
VESTIBULE [100]	N/A	PANIC BUTTON UNDER DESK	ALARM CONTROLS: TS-18

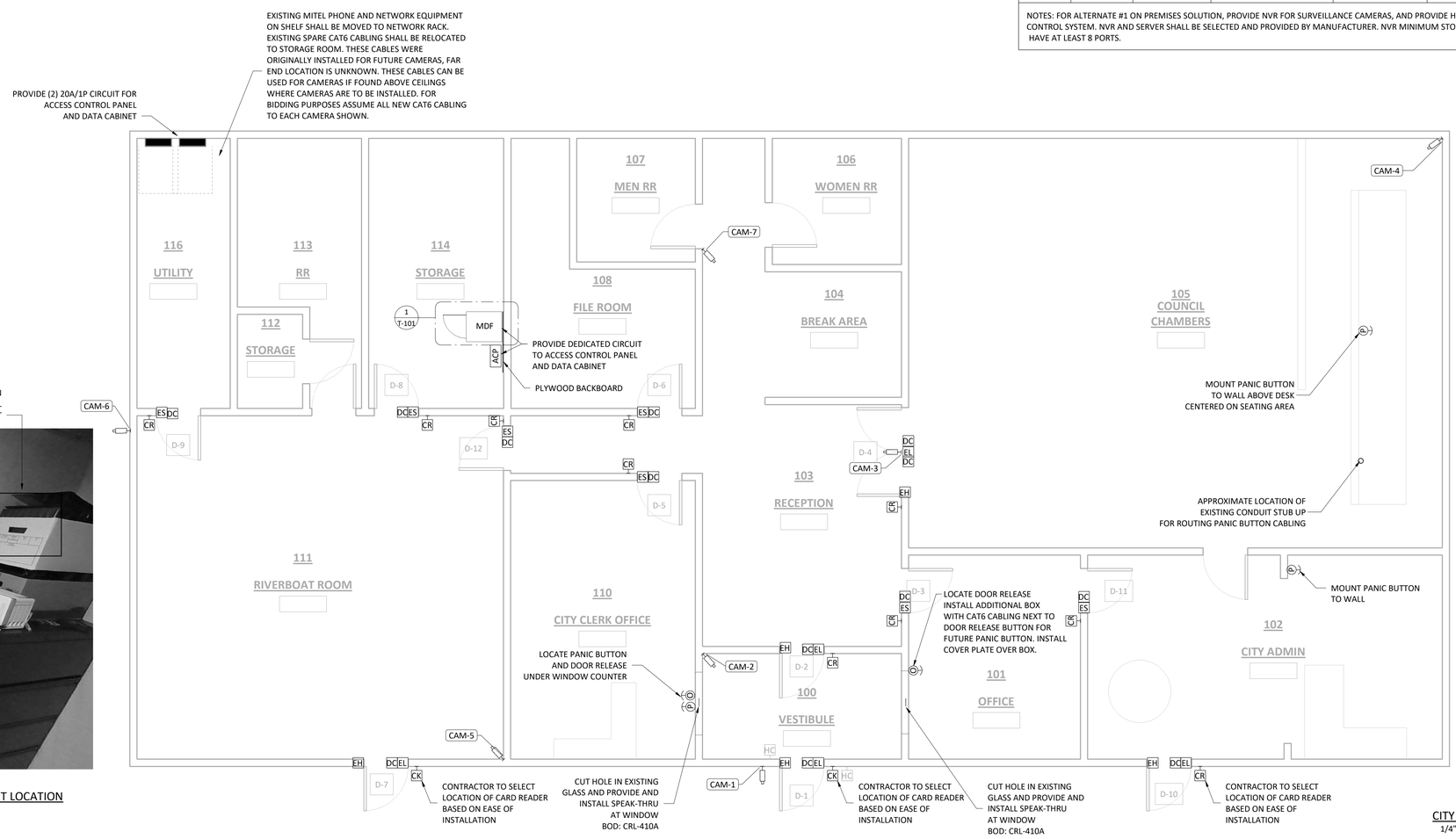
CAMERA SCHEDULE BASIS OF DESIGN C.H.

CAMERA	MOUNTING	MFR.	DESCRIPTION	MODEL #	ACCESSORIES
CAM-1	WALL | 9'	AVIGILON	MULTI-SENSOR 270	15C-H5A-4MH-30	H5AMH-AD-PEND1, H5AMH-DO-COVR1-WLMT-1001, AWA-CLD-5YR
CAM-2	CEILING | 9'	AVIGILON	DOME INTERIOR	COMPACTDOME-W-5MP-30	ACC-DRO-CEI-DROP CEILING MOUNT, AWA-CLD-5YR
CAM-3	CEILING | 9'	AVIGILON	DOME INTERIOR	COMPACTDOME-W-5MP-30	ACC-DRO-CEI-DROP CEILING MOUNT, AWA-CLD-5YR
CAM-4	CEILING | 9'	AVIGILON	DOME	5.0C - H6SL-D1-30	SLSPCIL-1001 - CEILING MOUNT ADAPTER, AWA-CLD-5YR
CAM-5	CEILING | 9'	AVIGILON	DOME	5.0C - H6SL-D1-30	SLSPCIL-1001 - CEILING MOUNT ADAPTER, AWA-CLD-5YR
CAM-6	WALL | 9'	AVIGILON	DOME 2	20C - H5A-4MH-30	H5AMH-AD-PEND1, H5AMH-DO-COVR1-WLMT-1001, AWA-CLD-5YR
CAM-7	CEILING | 9'	AVIGILON	COMPACT DOME	COMPACTDOME -W-5MP-30	ACC-DRO-CEI-DROP CEILING MOUNT, AWA-CLD-5YR

TECHNOLOGY SCHEDULE C.H.

LABEL	LOCATION	MANUFACTURER	DESCRIPTION	MODEL #	NOTES
SW-1	DATA RACK	CISCO MERAKI	NETWORK SWITCH 12 PORT PoE	C9200CX-12P-2X2G-E	PROVIDE WITH BRACKETS OR SHELF FOR RACK MOUNT
PP-12	DATA RACK	RACKMOUNT SOLUTIONS	12 PORT RACK MOUNTED COPPER PATCH PANEL	RS-UP12CAT6	
MDF	WALL	NAVEPOINT	9U WALL-MOUNT CABINET	00406451	PROVIDE DUPLEX RECEPTACLE PROVIDE 20A/1P CIRCUIT TO CABINET
FAN	DATA RACK	NAVEPOINT	CABINET FAN	00404176	
ACP	WALL	AVIGILON	ACCESS CONTROL PANEL	SYS-16-ENT-DVE6	PROVIDE 20A/1P CIRCUIT PANEL
FH-1	DATA RACK	FHD	FIBER HOUSING	FHD-1UFMT-N	PROVIDE WITH CASSETTES FOR FIBER
UPS	DATA RACK	TRIPPLITE	2KVA UNINTERUPTABLE POWER SUPPLY	SU2200RTXLCD2U	

NOTES: FOR ALTERNATE #1 ON PREMISES SOLUTION, PROVIDE NVR FOR SURVEILLANCE CAMERAS, AND PROVIDE HEAD-END SERVER FOR ACCESS CONTROL SYSTEM. NVR AND SERVER SHALL BE SELECTED AND PROVIDED BY MANUFACTURER. NVR MINIMUM STORAGE SHALL BE 12TB AND HAVE AT LEAST 8 PORTS.



CITY HALL
1/4" = 1'-0"
N

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CITY OF RIVERSIDE SECURITY UPGRADES
RIVERSIDE, IA

ISSUED FOR
BID

DATE	Issue Date
DESCRIPTION	DATE

DRAWN BY	CDK
CHECKED BY	KDM
PROJECT NO.	240139

SHEET NAME
CITY HALL TECHNOLOGY PLAN

T-101

GENERAL NOTES (FIRE STATION):

1. EXISTING DOORS WITH CARD READERS SHALL RE-USE EXISTING ACCESS CONTROL CABLE. PROVIDE 2-#18 TO DOORS WITH EXISTING CARD READERS FOR NEW DOOR CONTACT.
2. PROVIDE ACCESS CONTROL WIRING TO EACH DOOR PROVIDED WITH CARD READER THAT DOES NOT HAVE AN EXISTING READER.
   - BASIS OF DESIGN: BELDEN 432AFJ.
3. FOR LOCATIONS OF EQUIPMENT THAT REQUIRE CUTTING OF DRYWALL OR OTHER WALL MATERIAL, CONTRACTOR SHALL PATCH WALL AND PAINT OR RE-FINISH TO MATCH EXISTING CONDITIONS.
4. CONTRACTOR SHALL SEAL ALL PENETRATIONS THROUGH BUILDING ENVELOPE TO MAINTAIN FIRE RATING.
5. FOR PENDANT MOUNTED CAMERAS, PROVIE UINISTRUT MOUNTED TO STRUCTURE AND USE EMT TO SUPPORT CAMERA FROM STRUT.

ACCESS CONTROL DOOR SCHEDULE BASIS OF DESIGN F.S.

LOCATION	TAG	DESCRIPTION	MODEL #
VESTIBULE [100]	D-1	ELECTRIC LOCK (EXISTING)	
VESTIBULE [100]	D-1	CARD READER / KEYPAD	AVIGILON: OP-RKP-STD
VESTIBULE [100]	D-1	DOOR CONTACT	SCHLAGE: 679-05HM
COMMUNITY SPACE [102]	D-2	CARD READER / KEYPAD	AVIGILON: OP-RKP-STD
COMMUNITY SPACE [102]	D-2	ELECTRIFIED LATCH RETRACTION KIT	VON DUPRIN: QEL
COMMUNITY SPACE [102]	D-2	DOOR CONTACT	SCHLAGE: 679-05HM
COMMUNITY SPACE [102]	D-2	ELECTRIFIED HINGE	STANLEY: CECB179-66 4-1/2-1/2 26D
APPARATUS BAY [110]	D-3	ELECTRIC LOCK (EXISTING)	
APPARATUS BAY [110]	D-3	CARD READER / KEYPAD	AVIGILON: OP-RKP-STD
APPARATUS BAY [110]	D-3	DOOR CONTACT	SCHLAGE: 679-05HM
APPARATUS BAY [110]	D-4	ELECTRIC LOCK (EXISTING)	
APPARATUS BAY [110]	D-4	CARD READER / KEYPAD	AVIGILON: OP-RKP-STD
APPARATUS BAY [110]	D-4	DOOR CONTACT	SCHLAGE: 679-05HM
UTILITY [107]	D-13	ELECTRIC STRIKE	VON DUPRIN: 621132
UTILITY [107]	D-13	CARD READER	AVIGILON: OP-R2X-STD
UTILITY [107]	D-13	DOOR CONTACT	SCHLAGE: 679-05HM
COMMUNITY SPACE [102]	D-14	DOOR CONTACT	SCHLAGE: 679-05HM
COMMUNITY SPACE [102]	D-14	CARD READER / KEYPAD	AVIGILON: OP-RKP-STD
APPARATUS BAY [110]	D-15	ELECTRIC LOCK (EXISTING)	
APPARATUS BAY [110]	D-15	CARD READER / KEYPAD	AVIGILON: OP-RKP-STD
APPARATUS BAY [110]	D-15	DOOR CONTACT	SCHLAGE: 679-05HM

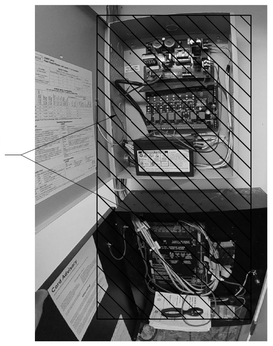
CAMERA SCHEDULE BASIS OF DESIGN F.S.

CAMERA	MOUNTING	MFR.	DESCRIPTION	MODEL #	ACCESSORIES/MOUNTS
CAM-1	CORNER MOUNT | 10'	AVIGILON	MULTI-SENSOR 270	15C-H5A-4MH-30	H5AMH-AD-PEND1, H5AMH-DO-COVR1, WLMT-1001, CRNMT-1001, AWA-CLD-5YR
CAM-2	WALL | 15'	AVIGILON	MULTI-SENSOR 270	15C-H5A-4MH-30	H5AMH-AD-PEND1, H5AMH-DO-COVR1, WLMT-1001, CRNMT-1001, AWA-CLD-5YR
CAM-3	CORNER MOUNT | 10'	AVIGILON	MULTI-SENSOR 270	15C-H5A-4MH-30	H5AMH-AD-PEND1, H5AMH-DO-COVR1, WLMT-1001, CRNMT-1001, AWA-CLD-5YR
CAM-4	CEILING | 15'	AVIGILON	360 PENDANT	20C-H5A-4MH-30	H5AMH-AD-PEND1, H5AMH-DO-COVR1, NPTA-1001, AWA-CLD-5YR

TECHNOLOGY SCHEDULE F.S.

LABEL	LOCATION	MANUFACTURER	DESCRIPTION	MODEL #	NOTES
NET-SW	DATA RACK	CISCO MERAKI	NETWORK SWITCH 12 PORT PoE	C9200CX-12P-2X2G-E	PROVIDE WITH BRACKETS OR SHELF FOR RACK MOUNT
PP-12	DATA RACK	RACKMOUNT SOLUTIONS	12 PORT RACK MOUNT COPPER PATCH PANEL	RS-UP12CAT6	
ACP	WALL	AVIGILON	ACCESS CONTROL PANEL	SYS-16-ENT-DVE6	
UPS	DATA RACK	TRIPPLITE	2KVA UNINTERUPTABLE POWER SUPPLY	SU2200RTXLCD2U	

NOTES: FOR ALTERNATE #1 ON PREMISES SOLUTION, PROVIDE NVR IN LIU OF NETWORK SWITCH FOR SURVEILLANCE CAMERAS, AND PROVIDE HEAD-END SERVER FOR ACCESS CONTROL SYSTEM. NVR AND SERVER SHALL BE SELECTED BY MANUFACTURER/CONSULTANT. NVR MINIMUM STORAGE SHALL BE 12TB AND HAVE AT LEAST 8 PORTS.

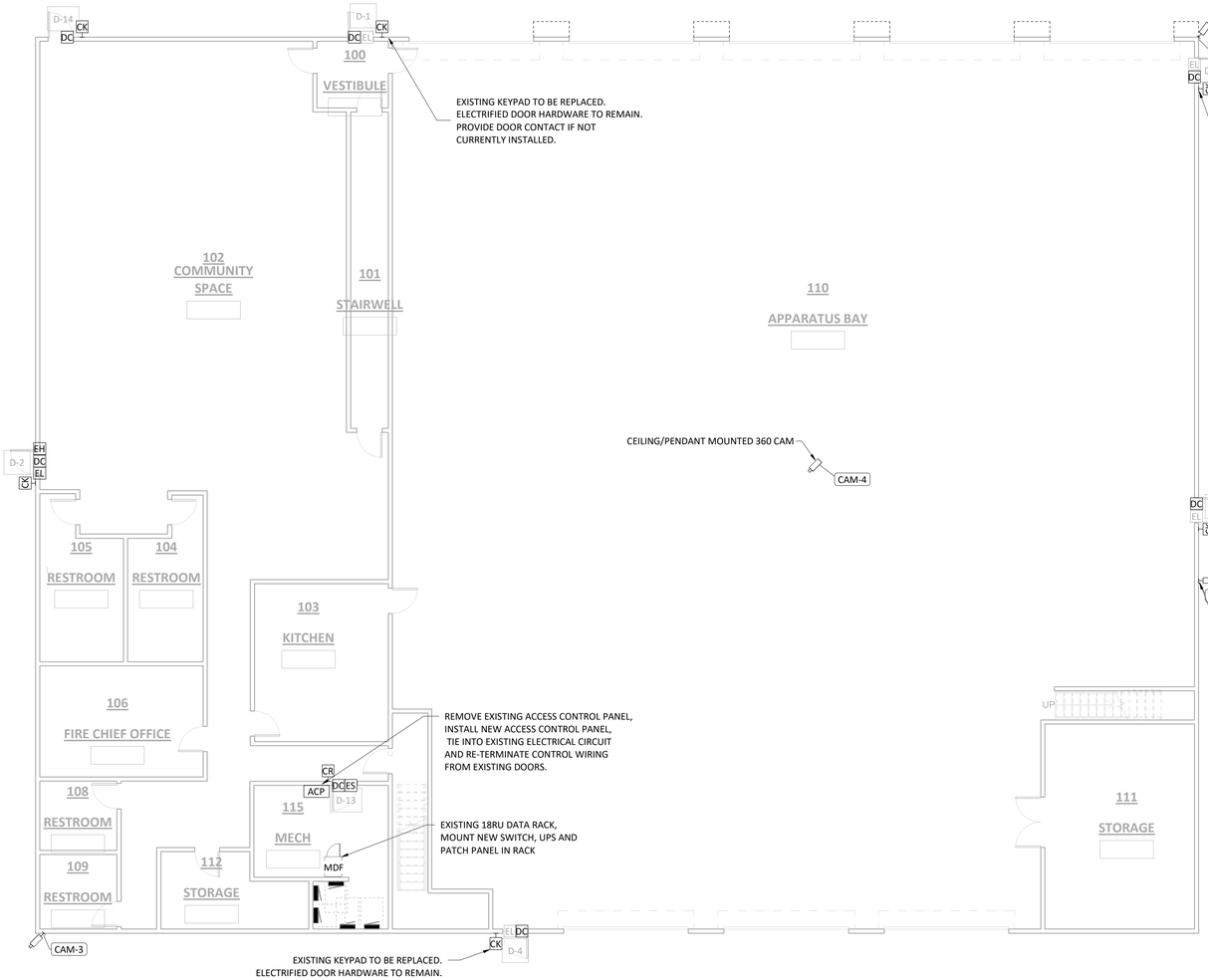


DEMO EXISTING ACCESS CONTROL PANEL (S). NEW PANEL TO GO IN PLACE OF EXISTING.

FIRESTATION - EXISTING ACCESS CONTROL PANEL

MOUNT NEW SWITCH, UPS AND PATCH PANEL TO EXISTING RACK

FIRESTATION - EXISTING DATA RACK



FIRE STATION
1/8" = 1'-0"

N

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DRAWN BY	CDK
CHECKED BY	KDM
PROJECT NO.	240139

SHEET NAME

FIRE STATION TECHNOLOGY PLAN

T-102

GENERAL NOTES (CITY SHOP):

1. PROVIDE ACCESS CONTROL WIRING TO EACH DOOR PROVIDED WITH CARD READER BASIS OF DESIGN: BELDEN 432AF).
2. PROVIDE 2-#18 TO EACH DOOR CONTACT.
3. FOR LOCATIONS OF EQUIPMENT THAT REQUIRE CUTTING OF DRYWALL OR OTHER WALL MATERIAL, CONTRACTOR SHALL PATCH WALL AND PAINT OR RE-FINISH TO MATCH EXISTING CONDITIONS.
4. CONTRACTOR SHALL SEAL ALL PENETRATIONS THROUGH BUILDING ENVELOPE TO MAINTAIN FIRE RATING.
5. FOR PENDANT MOUNTED CAMERA, PROVIDE UNISTRUT MOUNTED TO STRUCTURE AND USE EMT TO SUPPORT CAMERA FROM STRUT.
6. AFTER ISP HAS RELOCATED SERVICE ENTRANCE CABLE, CONTRACTOR TO RELOCATE MODEM TO SHELF IN RACK. CONTRACTOR SHALL RUN NEW CAT6 CABLE TO OFFICE SPACE AND TERMINATE IN SAME LOCATION. ASSUME FOUR CAT6 DROPS TO OFFICE FOM DATA CABINET.

ACCESS CONTROL DOOR SCHEDULE BASIS OF DESIGN C.S.

LOCATION	DOOR	TYPE	MODEL #
ENTRY MAIN [101]	D-1	CARD READER / KEYPAD	AVIGILON: OP-RKP-STD
MAIN SHOP [101]	D-1	ELECTRIC STRIKE	VON DUPRIN: 621132
MAIN SHOP [101]	D-1	DOOR CONTACT	SCHLAGE: 679-05HM
MAIN SHOP [101]	D-2	DOOR CONTACT	SCHLAGE: 679-05HM
SHOP STORAGE [102]	D-3	DOOR CONTACT	SCHLAGE: 679-05HM

CAMERA SCHEDULE BASIS OF DESIGN C.S.

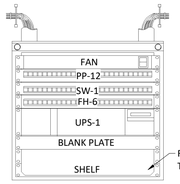
CAMERA	MOUNTING	MFR.	TYPE	MODEL #	ACCESSORIES/MOUNTS
CAM-1	CORNER MOUNT | 9'	AVIGILON	MULTI-SENSOR 270	15C-H5A-4MH-30	H5AMH-AD-PEND1, H5AMH-DO-COVR1, WLMT-1001, CRNMT-1001, AWA-CLD-5YR
CAM-2	CORNER MOUNT | 9'	AVIGILON	MULTI-SENSOR 270	15C-H5A-4MH-30	H5AMH-AD-PEND1, H5AMH-DO-COVR1, WLMT-1001, CRNMT-1001, AWA-CLD-5YR
CAM-3	CEILING/PENDANT | 20'	AVIGILON	360 PENDANT	20C-H5A-4MH-30	H5AMH-AD-PEND1, H5AMH-DO-COVR1, NPTA-1001, AWA-CLD-5YR
CAM-4	CORNER MOUNT | 9'	AVIGILON	DOME	5.0C - H65L-D1-30	SLSPCIL-1001 - CEILING MOUNT ADAPTER, AWA-CLD-5YR

TECHNOLOGY SCHEDULE CITY SHOP

LABEL	LOCATION	MANUFACTURER	DESCRIPTION	MODEL #	NOTES
SW-1	DATA RACK	CISCO MERAKI	NETWORK SWITCH 12 PORT PoE	C9200CX-12P-2X2G-E	PROVIDE WITH BRACKETS OR SHELF FOR RACK MOUNT PROVIDE DUPLEX FIBER SFP FOR SINGLE MODE FIBER
PP-12	DATA RACK	RACKMOUNT SOLUTIONS	12 PORT RACK MOUNT COPPER PATCH PANEL	RS-UP12CAT6	
MDF	WALL	NAVEPOINT	9U WALL-MOUNT CABINET	00406451	PROVIDE WITH A DUPLEX RECEPTACLE PROVIDE 20A/1P CIRCUIT TO CABINET
FAN	DATA RACK	NAVEPOINT	CABINET FAN	00404176	
FH-6	DATA RACK	FHD	FIBER HOUSING	FHD-1UFMT-N	PROVIDE WITH CASSETTES FOR FIBER
ACP	WALL	AVIGILON	ACCESS CONTROL PANEL	SYS-4-ENT-DVE1	PROVIDE 20A/1P CIRCUIT PANEL
UPS	DATA RACK	TRIPPLITE	2KVA UNINTERUPTABLE POWER SUPPLY	SU2200RTXLCD2U	

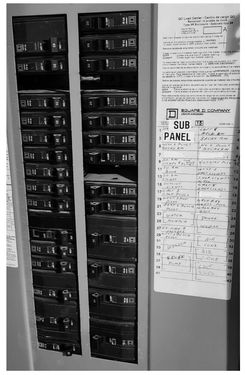
NOTES: FOR ALTERNATE #1 ON PREMISES SOLUTION, PROVIDE NVR IN LIEU OF NETWORK SWITCH FOR SURVEILLANCE CAMERAS, AND PROVIDE HEAD-END SERVER FOR ACCESS CONTROL SYSTEM. NVR AND SERVER SHALL BE SELECTED BY MANUFACTURER/CONSULTANT. NVR MINIMUM STORAGE SHALL BE 6TB AND HAVE AT LEAST 8 PORTS.

CITY SHOP MEZZANINE
1/4" = 1'-0"



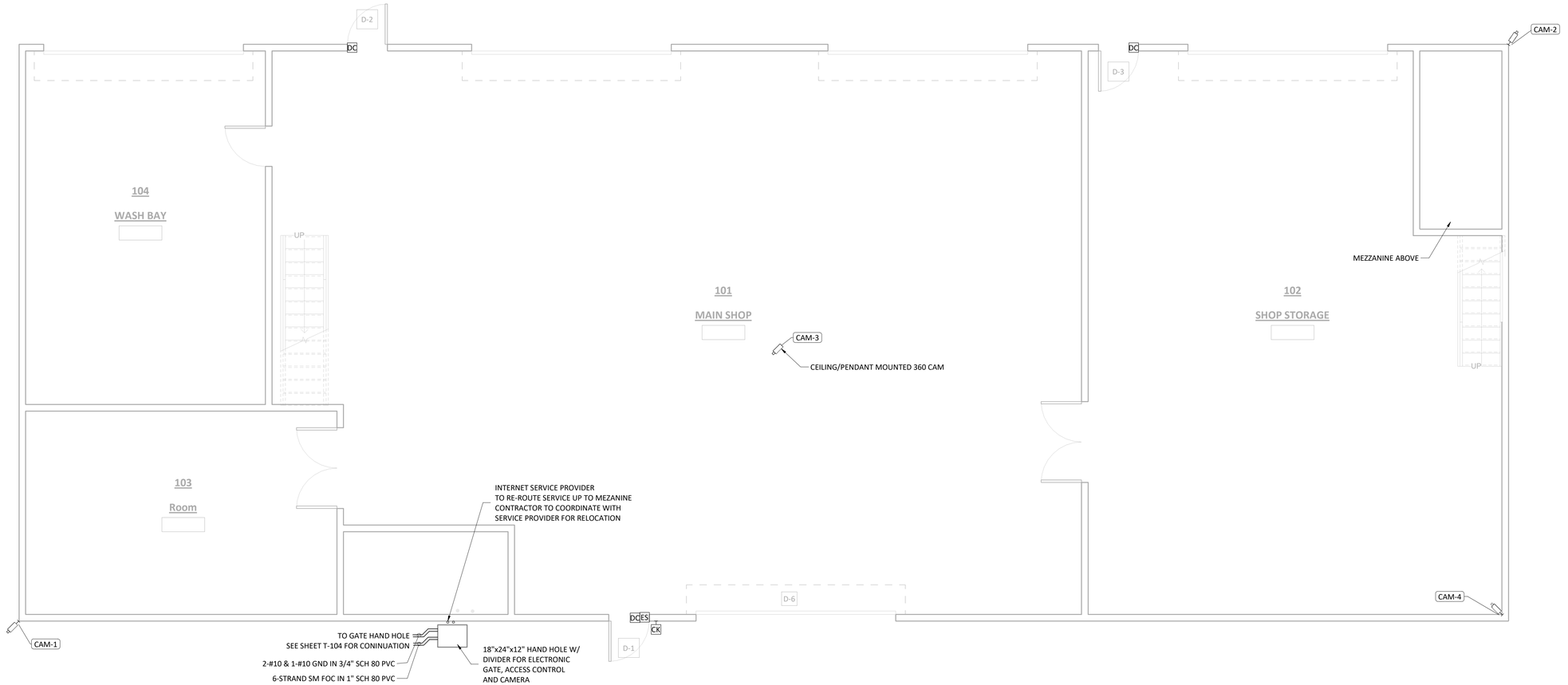
NOTE:
1. THE DATA RACK ELEVATION IS INTENDED TO DISPLAY THE TYPICAL EQUIPMENT LAYOUT.
2. THE CONTRACTOR SHALL FOLLOW THE TYPICAL LAYOUT DURING INSTALLATION. IF FOR ANY REASON THERE IS NEED TO MODIFY THE LAYOUT THE CONTRACTOR SHALL CONFIRM WITH DESIGN PROFESSIONAL AND OR THE OWNER PRIOR TO MAKING ANY CHANGES.
3. INCLUDED DATA SCHEDULE TO BE SHOWN ON INSIDE OF DATA CABINET DOOR.

9U MDF DATA RACK ELEVATION DETAIL
NTS
1
T-103



SQUARE-D PANEL. PROVIDE NEW 20A/1P BREAKER IN SPARE SLOT PROVIDE TWO SETS OF 3/4" CONDUIT AND 2-#12 & 1-#12 GND TO ACCESS CONTROL PANEL AND DATA CABINET. LABEL NEW CIRCUIT ON PANEL SCHEDULE.

EXISTING ELECTRICAL PANEL



CITY SHOP
1/4" = 1'-0"
N

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CITY OF RIVERSIDE SECURITY UPGRADES
RIVERSIDE, IA

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CHECKED BY	KDM
PROJECT NO.	240139

SHEET NAME
CITY SHOP TECHNOLOGY PLAN

T-103

MOTORIZED GATE NOTES:

1. MOTORIZED GATES ARE DELEGATED DESIGN. CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF MOTORIZED SLIDING GATE SYSTEM. CONTRACTOR SHALL WORK WITH GATE MANUFACTURER TO SELECT A GATE THAT MEETS THE REQUIREMENTS OF THE SPECIFICATION. SIZE OF GATE SHALL BE DETERMINED BY GATE MANUFACTURER, THE APPROXIMATE WIDTH OF THE ROADWAY IS 26 FEET.
2. PRIOR TO STARTING WORK CONTRACTOR SHALL CONFIRM SITE DIMENSIONS, TOPOGRAPHY AND ANY OBSTACLES THAT MAY IMPACT INSTALLATION.
3. PERFORM ANY NECESSARY EXCAVATION OR FOUNDATION WORK FOR THE INSTALLATION OF GATE TRACKS, POST AND SUPPORTING INFRASTRUCTURE. ENSURE AREA IS CLEARED OF DEBRIS OR OBSTRUCTIONS THAT COULD INTERFERE WITH GATE OPERATION.
4. PROVIDE ALL NECESSARY TOOLS, EQUIPMENT AND MATERIALS FOR SITE PREPARATION.
5. CONTRACTOR SHALL PROVIDE ALL MATERIALS REQUIRED FOR THE FABRICATION AND INSTALLATION OF THE SLIDING GATE, INCLUDING POLES, FOUNDATIONS, FENCING, GATE PANEL, MOTOR, CONTROL SYSTEM, SENSORS, TRACK, WHEELS POST AND ANY OTHER RELATED COMPONENTS. IF THERE IS A GAP IN FENCING BECAUSE OF THE INSTALLATION OF THE GATE, THE CONTRACTOR SHALL INSTALL FENCING BETWEEN POSTS TO SECURE THE SITE.
6. INSTALL ALL ELECTRICAL AND COMMUNICATIONS WIRING REQUIRED FOR PROPER OPERATION OF GATE AND ACCESS CONTROL SYSTEM.
7. INSTALL AND INTEGRATE ALL SENSORS, SAFETY EDGES AND EMERGENCY STOP FUNCTIONS. POWER FOR MOTORIZED GATE SHALL BE FED FROM NEMA-4X CABINET LOCATED ON CAMERA POLE. THE GATE SHALL OPERATE IN CONJUNCTION WITH THE ACCESS CONTROL SYSTEM. PROVIDE ALL EQUIPMENT AND DEVICES FOR INTEGRATION WITH ACCESS CONTROL SYSTEM. PROVIDE ALL WIRING BETWEEN GATE CONTROLLER AND ACCESS CONTROL PANEL.
8. CONDUCT TESTING OF MOTORIZED GATE AND ACCESS CONTROL SYSTEM AS WELL AS SAFETY SYSTEMS OF GATE PRIOR TO TURNING OVER TO OWNER.

ACCESS CONTROL DOOR SCHEDULE BASIS OF DESIGN C.S. SITE

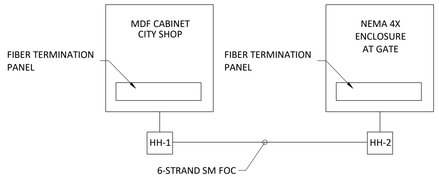
LOCATION	TYPE	MODEL #
GATE ENTRY	CARD READER	AVIGILON: OP-R2X-STD

CAMERA SCHEDULE BASIS OF DESIGN C.S. SITE

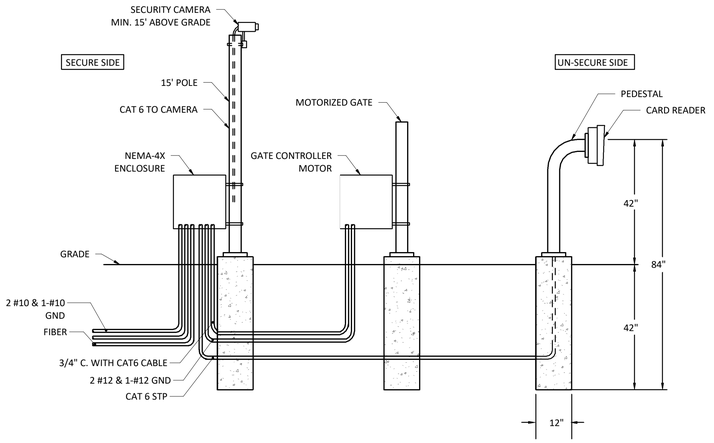
CAMERA	MOUNTING	MFR.	TYPE	MODEL #	ACCESSORIES/MOUNTS
CAM-1	POLE | 15'	AVIGILON	MULTI-SENSOR 270	15C-H5A-4MH-30	PLMT-1001, H5AMH-AD-PEND1 I H5AMH-DO-COVR1 or H5AMH-DO-COVR1-SMOKE I WLMT-1001 I Optional,H4AMH-AD-IRIL1, AWA-CLD-5YR

TECHNOLOGY SCHEDULE C.S. SITE

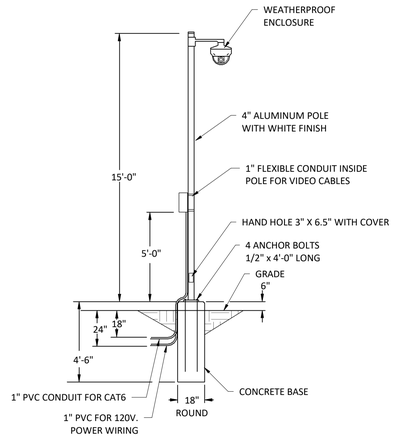
LABEL	LOCATION	BRAND	DESCRIPTION	MODEL #	NOTES
MED-CONV	NEMA-4X ENCLOSURE	CISCO CATALYST	MEDIA CONVERTER	C9200CX-12P-2X2G-E OR EQUIVALENT	PROVIDE DIN RAIL FOR MOUNTING IN ENCLOSURE. PROVIDE PLUG-IN POWER SUPPLY. PROVIDE FIBER SFP.
SFP	NETWORK SWITCH	SEMTECH	OPTICAL TRANSCEIVER MODULE	SFP-10GLRL-31	
FIBER	CONDUIT	QUICKTREX	12 PORT RACK MOUNT COPPER PATCH PANEL	PRO-769-S-IR-6	PROVIDE W/ PULLING EYE LENGTH TO BE DETERMINED BY EC
ENC	CAMERA POLE	VEVOR	12 PORT RACK MOUNT COPPER PATCH PANEL	SU2200RTXLCD2U	PROVIDEWITH THE FOLLOWING: BRACKET FOR POL, DIN RAILS, 30A TERMINAL BLOCK, (2) 15A/1P CIRCUIT BREAKERS AND GFCI RECEPTACLE.
ACP-2	NEMA-4X ENCLOSURE	AVIGILON	12 PORT RACK MOUNT COPPER PATCH PANEL	OP-CR-SDCW	PROVIDE IN RAIL MOUNT AND ACCESS CONTROL CABLING
POLE	SITE	STRONGPOLESW	4" ROUND CAMERA POLE 16'	SP-SM16-DB/B	PROVIDE WITH HAND HOLE AND SONOTUBE FOUNDATION



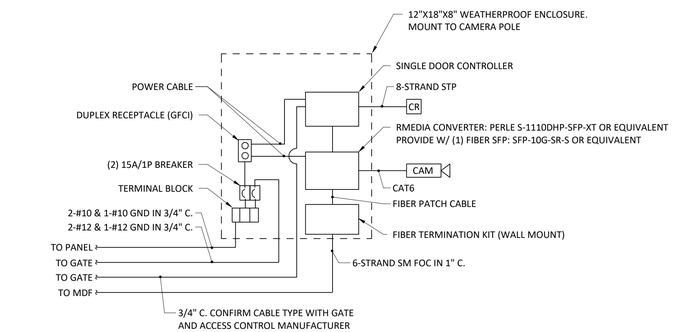
FIBER SINGLE LINE DIAGRAM — NTS — 3 / T-103A



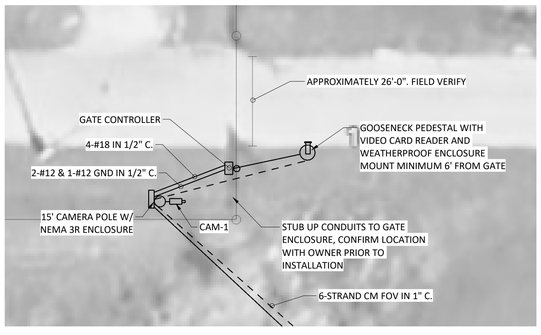
GOOSENECK PEDESTAL GATE — 1/2" = 1'-0" — 5 / T-103A



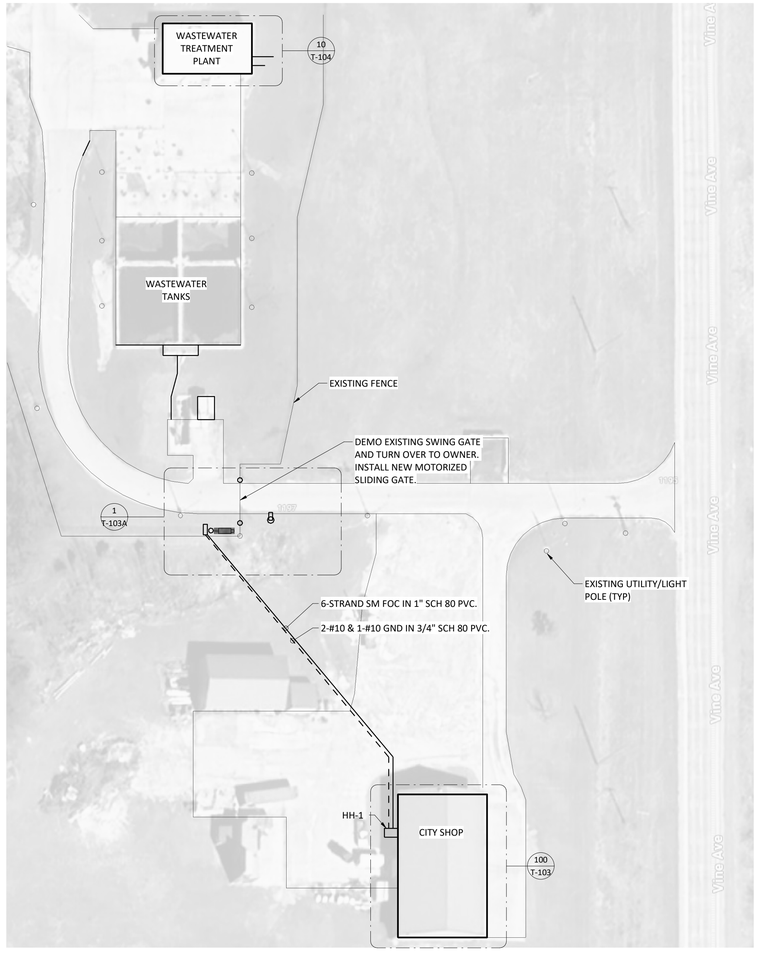
CAMERA POLE AND BASE DETAIL — 1/4" = 1'-0" — 2 / T-103A



ACCESS GATE SINGLE LINE DIAGRAM — NTS — 4 / T-103A



ENLARGED WASTEWATER TREATMENT GATE — NTS — 1 / T-103A



CITY SHOP TECHNOLOGY SITE — 1/4" = 1'-0" — N

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SHEET NAME

CITY SHOP TECHNOLOGY SITE PLAN

T-103A

GENERAL NOTES (WASTE WATER TREATMENT PLANT):

1. PROVIDE ACCESS CONTROL WIRING TO EACH DOOR PROVIDED WITH CARD READER
   A. BASIS OF DESIGN: BELDEN 432AFJ
2. PROVIDE 2-#18 TO EACH DOOR CONTACT.
3. FOR LOCATIONS OF EQUIPMENT THAT REQUIRE CUTTING OF DRYWALL OR OTHER WALL MATERIAL, CONTRACTOR SHALL PATCH WALL AND PAINT/RE-FINISH TO MATCH EXISTING CONDITIONS.
4. CONTRACTOR SHALL SEAL ALL PENETRATIONS THROUGH BUILDING ENVELOPE TO MAINTAIN FIRE RATING.

ACCESS CONTROL DOOR SCHEDULE BASIS OF DESIGN W.T.T.P.

LOCATION	DOOR	TYPE	MODEL #
FOYER [100]	D-1	CARD READER / KEYPAD	AVIGILON: OP-RKP-STD
FOYER [100]	D-1	ELECTRIC LOCK	VON DUPRIN: 621132
FOYER [100]	D-1	DOOR CONTACT	SCHLAGE: 679-05HM
FOYER [100]	D-1	ELECTRIFIED HINGE	STANLEY: CECB179-66 4-1/2-1/2 26D
SOLIDS [106]	D-2	DOOR CONTACT	SCHLAGE: 679-05HM
ELECTRICAL ROOM [105]	D-3	DOOR CONTACT	SCHLAGE: 679-05HM
ELECTRICAL ROOM [105]	D-3	DOOR CONTACT	SCHLAGE: 679-05HM
ROOM [103]	D-4	DOOR CONTACT	SCHLAGE: 679-05HM
SOLIDS [106]	D-5	CARD READER / KEYPAD	AVIGILON: OP-RKP-STD
SOLIDS [106]	D-5	DOOR CONTACT	SCHLAGE: 679-05HM
SOLIDS [106]	D-5	ELECTRIFIED LATCH RETRACTION KIT	VON DUPRIN: QEL
SOLIDS [106]	D-5	ELECTRIFIED HINGE	STANLEY: CECB179-66 4-1/2-1/2 26D
BLOWER ROOM [104]	D-6	DOOR CONTACT	SCHLAGE: 679-05HM
BLOWER ROOM [104]	D-6	CARD READER / KEYPAD	AVIGILON: OP-RKP-STD
BLOWER ROOM [104]	D-6	ELECTRIFIED LATCH RETRACTION KIT	VON DUPRIN: QEL
BLOWER ROOM [104]	D-6	ELECTRIFIED HINGE	STANLEY: CECB179-66 4-1/2-1/2 26D
BLOWER ROOM [104]	D-6	DOOR CONTACT	SCHLAGE: 679-05HM
ELECTRICAL ROOM [105]	D-7	DOOR CONTACT	SCHLAGE: 679-05HM
ELECTRICAL ROOM [105]	D-7	DOOR ALARM	SDC: EA-728V

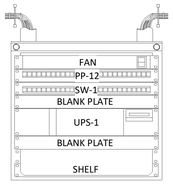
CAMERA SCHEDULE BASIS OF DESIGN W.W.T.P.

CAMERA	MOUNTING	MFR.	LOCATION	TYPE	MODEL #	ACCESSORIES
CAM-1	CORNER MOUNT | 9'	AVIGILON	WWTP	MULTI-SENSOR 270	15C-H5A-4MH-30	H5AMH-AD-PEND1, H5AMH-DO-COVR1, WLMT-1001, CRNMT-1001, AWA-CLD-5YR
CAM-2	CORNER MOUNT | 9'	AVIGILON	WWTP	MULTI-SENSOR 270	15C-H5A-4MH-30	H5AMH-AD-PEND1, H5AMH-DO-COVR1, WLMT-1001, CRNMT-1001, AWA-CLD-5YR
CAM-3	CORNER MOUNT | 9'	AVIGILON	WWTP	ALTA BULLET	5.0C - H6SL-B01-30	CRNMT-1001, AWA-CLD-5YR
CAM-4	WALL | 9'	AVIGILON	WWTP	ALTA DOME	5.0C - H6SL-D1-30	WLMT-1001, CRNMT-1001, AWA-CLD-5YR

TECHNOLOGY SCHEDULE W.W.T.P.

LABEL	LOCATION	MANUFACTURER	DESCRIPTION	MODEL #	NOTES
SW-1	DATA RACK	CISCO MERAKI	NETWORK SWITCH 12 PORT PoE	C9200CX-12P-2X2G-E	PROVIDE WITH BRACKETS OR SHELF FOR RACK MOUNT
PP-12	DATA RACK	RACKMOUNT SOLUTIONS	12 PORT RACK MOUNT COPPER PATCH PANEL	RS-UP12CAT6	
FH-6W	NEMA-4X ENCLOSURE	PRIMUS CABLE	NEMA-4X ENCLOSURE	WALL MOUNT FIBER ENCLOSURE	PROVIDE LC DUPLEX ADAPTERS PROVIDE LC FIBER PATCH CABLES
MDP	WALL	NAVEPOINT	9U DATA RACK	00406451	PROVIDE WITH DUPLEX RECEPTACLE PROVIDE 20A/1P CIRCUIT TO CABINET
ACP	WALL	AVIGILON	ACCESS CONTROL PANEL	SYS-8-ENT-DVE8	PROVIDE 20A/1P CIRCUIT PANEL
GM-1	WALL	MSA	GAS MONITOR	TG5000	WIRED INTO ACCESS CONTROLS PROVIDE SENSORS TO MONITOR METHANE, HYDROGEN SULFIDE
GM-2	WALL	MSA	GAS MONITOR	TG5000	WIRED INTO ACCESS CONTROLS PROVIDE SENSORS TO MONITOR OXYGEN
UPS	DATA RACK	TRIPPLITE	2KVA UNINTERUPTABLE POWER SUPPLY	SU2200RTXLCD2U	

NOTES: FOR ALTERNATE #1 ON PREMISES SOLUTION, PROVIDE FOR SURVEILLANCE CAMERAS. NVR SHALL BE SELECTED AND PROVIDED BY MANUFACTURER. NVR MINIMUM STORAGE SHALL BE 6TB AND HAVE AT LEAST 8 PORTS.

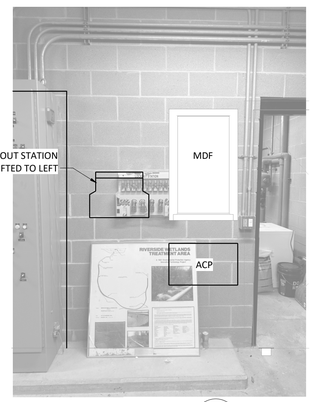


NOTE:
1. THE DATA RACK ELEVATION IS INTENDED TO DISPLAY THE TYPICAL EQUIPMENT LAYOUT.
2. THE CONTRACTOR SHALL FOLLOW THE TYPICAL LAYOUT DURING INSTALLATION. IF FOR ANY REASON THERE IS NEED TO MODIFY THE LAYOUT THE CONTRACTOR SHALL CONFIRM WITH DESIGN PROFESSIONAL AND OR THE OWNER PRIOR TO MAKING ANY CHANGES.
3. INCLUDED DATA SCHEDULE TO BE SHOWN ON INSIDE OF DATA CABINET DOOR.

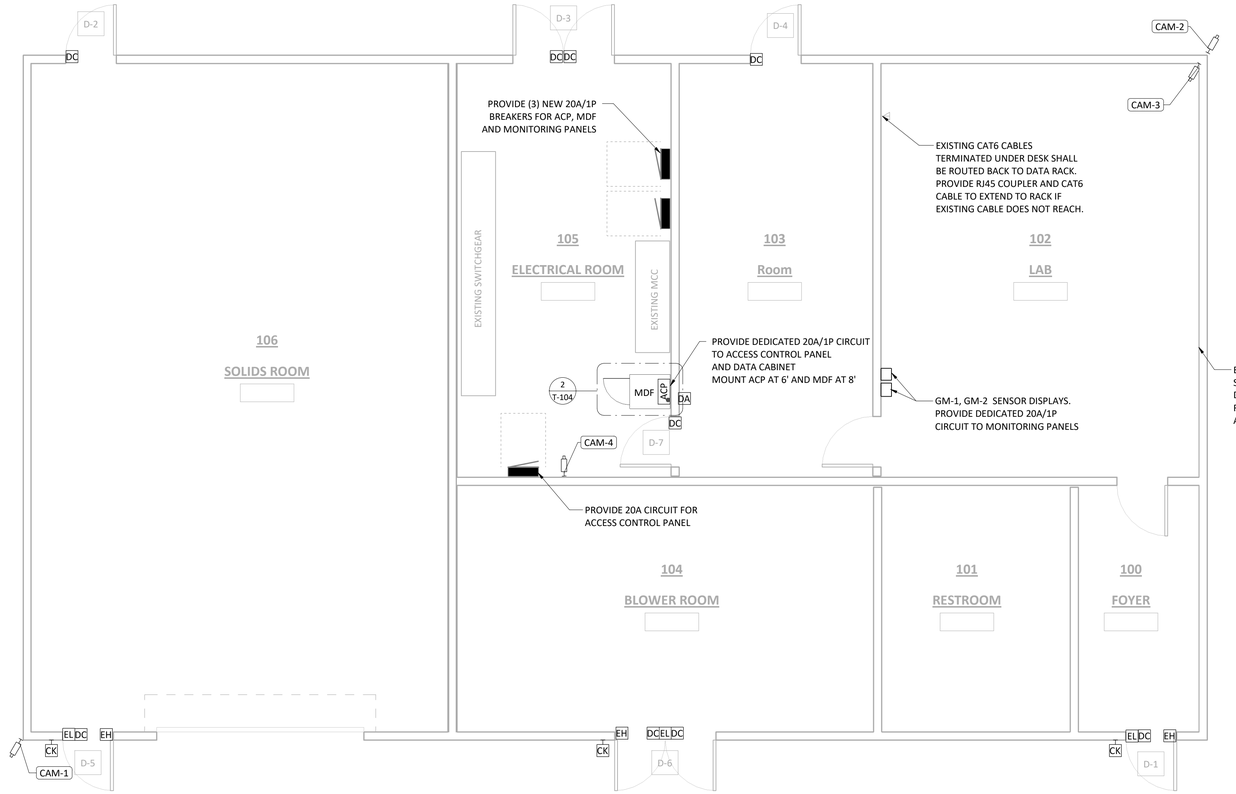
9U MDF DATA RACK ELEVATION DETAIL — 2 / T-104
NTS

SQUARE-D PANEL. PROVIDE (3) NEW 20A/1P BREAKER IN SPARE SLOT
PROVIDE THREE SETS 3/4" CONDUIT AND 2-#12 & 1-#12 GND TO ACCESS CONTROL PANEL DATA CABINET AND MONITORING PANELS. LABEL NEW CIRCUITS ON PANEL SCHEDULE

EXISTING SQUARE D PANELBOARD



MDF ELEVATION — 1 / T-104
NTS



WASTEWATER TREATMENT PLANT
1/4" = 1'-0"

N

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CITY OF RIVERSIDE SECURITY UPGRADES
RIVERSIDE, IA

ISSUED FOR
BID

DATE	Issue Date
DESCRIPTION	DATE

DRAWN BY	CDK
CHECKED BY	KDM
PROJECT NO.	240139

SHEET NAME
WASTE WATER TREATMENT PLANT TECHNOLOGY PLAN

T-104

GENERAL NOTES (WATER TREATMENT PLANT):

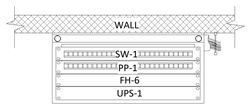
1. VERIFY ALL SITE CONDITIONS PRIOR TO STARTING WORK.
2. COORDINATION ALL CONDUIT ROUTING WITH BUILDING STRUCTURE AND OTHER TRADES PRIOR TO INSTALLATION TO ALLOW FOR PROPER CLEARANCE SPACE.
3. DATA DROPS TO EQUIPMENT ARE LOCATED IN THE GENERAL AREA OF TERMINATION POINT. COORDINATE EXACT LOCATION WITH OWNER PROVIDED EQUIPMENT PRIOR TO INSTALLATION.
4. EQUIPMENT SHOWN ARE LOCATED IN THE GENERAL AREA WHERE THEY WILL BE INSTALLED. COORDINATE WITH OWNER FOR FINAL LOCATION.
5. CAT 6 CABLING SHOULD BE UTILIZED WITH A STANDARD OF 2 PORTS PER NETWORK DROP LOCATION (PLACED IN ACCORDANCE WITH FURNITURE AND CASEWORK UNLESS OTHERWISE NOTED.)
6. ALL DATA OUTLETS TO BE WIRED BACK TO DATA RACK USING CAT6 CABLE.
7. PROVIDE CAT6 CABLE TO EACH SECURITY CAMERA. ALL CAMERAS TO BE MOUNTED AT 9'-0" AFF UNLESS OTHERWISE NOTED.
8. VERIFY RECEPTACLE MOUNTING LOCATIONS IN OFFICES WITH EXISTING CONDITIONS.

ACCESS CONTROL DOOR SCHEDULE BASIS OF DESIGN W.T.P.

LOCATION	DOOR	TYPE	MODEL #
ENTRYWAY [100]	D-1	CARD READER / KEYPAD	AVIGILON: OP-RKP-STD
ENTRYWAY [100]	D-1	DOOR CONTACT	SCHLAGE: 679-05HM
PROCESS AREA [105]	D-2	DOOR CONTACT	SCHLAGE: 679-05HM
PROCESS AREA [105]	D-3	DOOR CONTACT	SCHLAGE: 679-05HM
PROCESS AREA [105]	D-4	DOOR CONTACT	SCHLAGE: 679-05HM
PROCESS AREA [105]	D-5	ELECTRIC LOCK	VON DUPRIN: 621132
PROCESS AREA [105]	D-5	CARD READER / KEYPAD	AVIGILON: OP-RKP-STD
PROCESS AREA [105]	D-5	DOOR CONTACT	SCHLAGE: 679-05HM
PROCESS AREA [105]	D-5	ELECTRIFIED HINGE	STANLEY: CECB179-66 4-1/2-1/2 26D
PROCESS AREA [105]	D-6	DOOR CONTACT	SCHLAGE: 679-05HM
PROCESS AREA [105]	D-7	DOOR CONTACT	SCHLAGE: 679-05HM

CAMERA SCHEDULE BASIS OF DESIGN W.T.P.

CAMERA	MOUNTING	MFR	LOCATION	TYPE	MODEL #	ACCESSORIES
CAM-1	WALL | 9'	AVIGILON	WTP	MULTI-SENSOR 270	15C-H5A-4MH-30	H5AMH-AD-PEND1, H5AMH-DO-COVR1-WLMT-1001, AWA-CLD-5YR
CAM-2	CORNER MOUNT | 9'	AVIGILON	WTP	MULTI-SENSOR 270	15C-H5A-4MH-30	H5AMH-AD-PEND1, H5AMH-DO-COVR1-WLMT-1001, AWA-CLD-5YR
CAM-4	WALL | 9'	AVIGILON	WTP	BULLET	5.0-H6SL-B01-30	ES-HD-MNT-PLATE, AWA-CLD-5YR
CAM-6	CORNER MOUNT | 9'	AVIGILON	WTP	BULLET	5.0-H6SL-B01-30	CRNMT-1001, AWA-CLD-5YR
CAM-7	WALL | 9'	AVIGILON	WTP	MULTI-SENSOR 270	15C-H5A-4MH-30	H5AMH-AD-PEND1, H5AMH-DO-COVR1-WLMT-1001, AWA-CLD-5YR



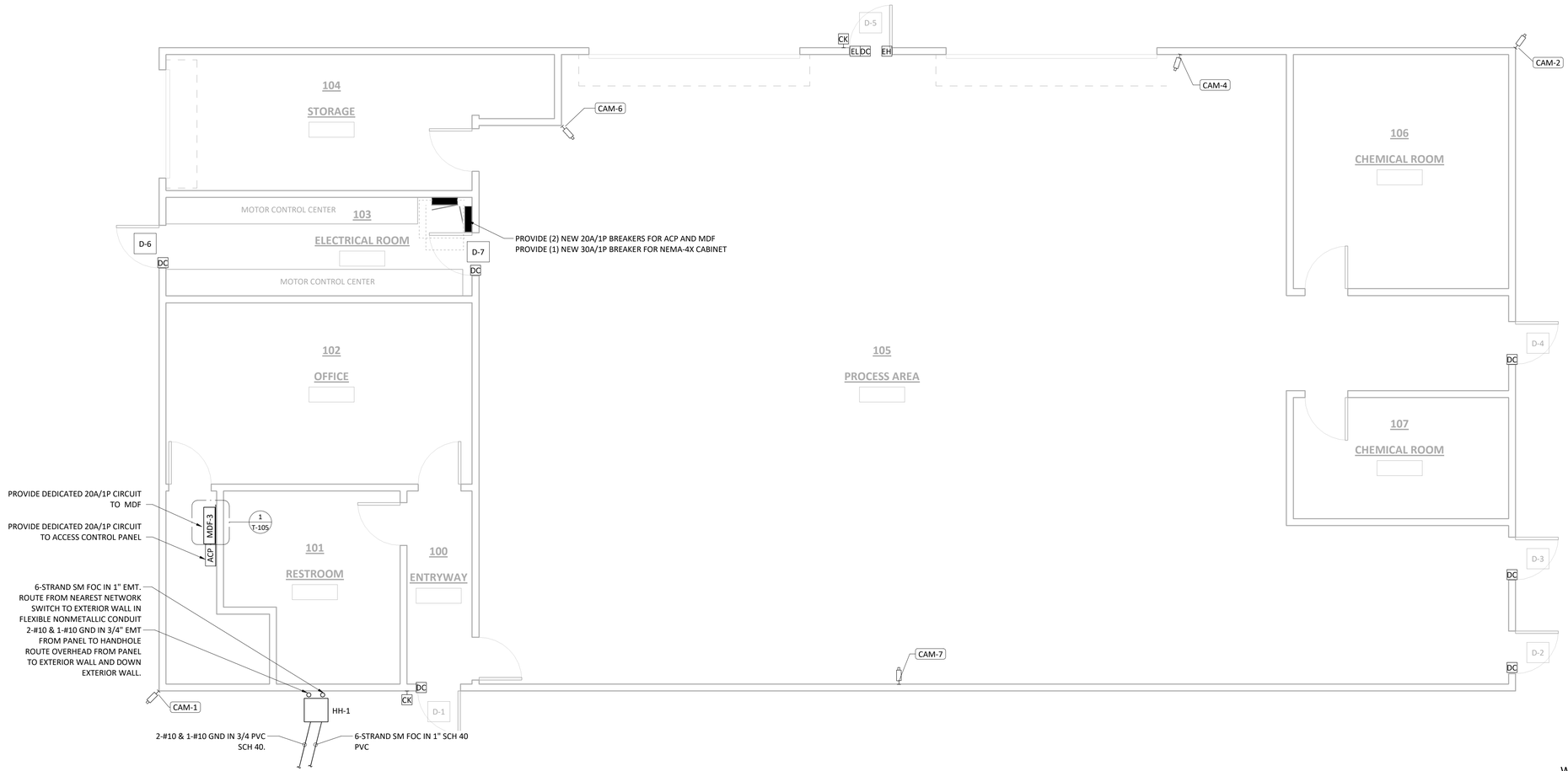
TECHNOLOGY SCHEDULE W.T.P.

LABEL	LOCATION	MANUFACTURER	DESCRIPTION	MODEL #	NOTES
NET-SW	DATA RACK	CISCO MERAKI	NETWORK SWITCH 12 PORT PoE	C9200CX-12P-2X2G-E	PROVIDE WITH BRACKETS OR SHELF FOR RACK MOUNT
PP-12	DATA RACK	RACKMOUNT SOLUTIONS	4U WALL-MOUNT CABINET	RS-UP12CAT6	
CAB	WALL	NAVEPOINT	12 PORT RACK MOUNT COPPER PATCH PANEL	#00406272	PROVIDE WITH BUILT IN FANS AND DUPLEX RECEPTACLE PROVIDE 20A/1P CIRCUIT TO CABINET
ACP	WALL	AVIGILON	ACCESS CONTROL PANEL	SYS-4-ENT-DVE1	PROVIDE 20A/1P CIRCUIT PANEL
UPS	DATA RACK	TRIPPLITE	1.5KVA UNINTERRUPTIBLE POWER SUPPLY	SMART1500RT1U	PROVIDE WITH BRACKETS FOR RACKMOUNTING

NOTES: FOR ALTERNATE #1 ON PREMISES SOLUTION, PROVIDE FOR SURVEILLANCE CAMERAS. NVR SHALL BE SELECTED AND PROVIDED BY MANUFACTURER. NVR MINIMUM STORAGE SHALL BE 12TB AND HAVE AT LEAST 8 PORTS.

NOTE:
1. THE DATA RACK ELEVATION IS INTENDED TO DISPLAY THE TYPICAL EQUIPMENT LAYOUT.
2. THE CONTRACTOR SHALL FOLLOW THE TYPICAL LAYOUT DURING INSTALLATION. IF FOR ANY REASON THERE IS NEED TO MODIFY THE LAYOUT THE CONTRACTOR SHALL CONFIRM WITH DESIGN PROFESSIONAL AND OR THE OWNER PRIOR TO MAKING ANY CHANGES.
3. INCLUDED DATA SCHEDULE TO BE SHOWN ON INSIDE OF DATA CABINET DOOR.
4. NOTE IF ALTERNATE #1 IS SELECTED, CONTRACTOR TO PROVIDE WALL MOUNTED FIBER HOUSING IN LIEU OF RACK MOUNT. NVR WILL TAKE PLACE OF FIBER HOUSING IN RACK.

4U MDF VERTICAL RACKDETAIL (1 / T-105)
NTS



WATER TREATMENT PLANT
1/4" = 1'-0"

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CITY OF RIVERSIDE SECURITY UPGRADES
RIVERSIDE, IA

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CHECKED BY	KDM
PROJECT NO.	240139

SHEET NAME
WATER TREATMENT PLANT TECHNOLOGY PLAN

T-105

MOTORIZED GATE NOTES:

1. MOTORIZED GATES ARE DELEGATED DESIGN. CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF MOTORIZED SLIDING GATE SYSTEM. CONTRACTOR SHALL WORK WITH GATE MANUFACTURER TO SELECT A GATE THAT MEETS THE REQUIREMENTS OF THE SPECIFICATION. SIZE OF GATE SHALL BE DETERMINED BY GATE MANUFACTURER, THE APPROXIMATE WIDTH OF THE ROADWAY IS 28 FEET.
2. PRIOR TO STARTING WORK CONTRACTOR SHALL CONFIRM SITE DIMENSIONS, TOPOGRAPHY AND ANY OBSTACLES THAT MAY IMPACT INSTALLATION.
3. PERFORM ANY NECESSARY EXCAVATION OR FOUNDATION WORK FOR THE INSTALLATION OF GATE TRACKS, POST AND SUPPORTING INFRASTRUCTURE. ENSURE AREA IS CLEARED OF DEBRIS OR OBSTRUCTIONS THAT COULD INTERFERE WITH GATE OPERATION.
4. PROVIDE ALL NECESSARY TOOLS, EQUIPMENT AND MATERIALS FOR SITE PREPARATION.
5. CONTRACTOR SHALL PROVIDE ALL MATERIALS REQUIRED FOR THE FABRICATION AND INSTALLATION OF THE SLIDING GATE, INCLUDING POLES, FOUNDATIONS, FENCING, GATE PANEL, MOTOR, CONTROL SYSTEM, SENSORS, TRACK, WHEELS POST AND ANY OTHER RELATED COMPONENTS. IF THERE IS A GAP IN FENCING BECAUSE OF THE INSTALLATION OF THE GATE, THE CONTRACTOR SHALL INSTALL FENCING BETWEEN POSTS TO SECURE THE SITE.
6. INSTALL ALL ELECTRICAL AND COMMUNICATIONS WIRING REQUIRED FOR PROPER OPERATION OF GATE AND ACCESS CONTROL SYSTEM.
7. INSTALL AND INTEGRATE ALL SENSORS, SAFETY EDGES AND EMERGENCY STOP FUNCTIONS. POWER FOR MOTORIZED GATE SHALL BE FED FROM NEMA-4X CABINET LOCATED ON CAMERA POLE. THE GATE SHALL OPERATE IN CONJUNCTION WITH THE ACCESS CONTROL SYSTEM. PROVIDE ALL EQUIPMENT AND DEVICES FOR INTEGRATION WITH ACCESS CONTROL SYSTEM. PROVIDE ALL WIRING BETWEEN GATE CONTROLLER AND ACCESS CONTROL PANEL.
8. CONDUCT TESTING OF MOTORIZED GATE AND ACCESS CONTROL SYSTEM AS WELL AS SAFETY SYSTEMS OF GATE PRIOR TO TURNING OVER TO OWNER.

ACCESS CONTROL DOOR SCHEDULE BASIS OF DESIGN W.W.T.P. SITE

LOCATION	DOOR	TYPE	MODEL INFO
GATE ENTRY	G-1	CARD READER	AVIGILON: OP-R2X-STD

HANDHOLE SCHEDULE

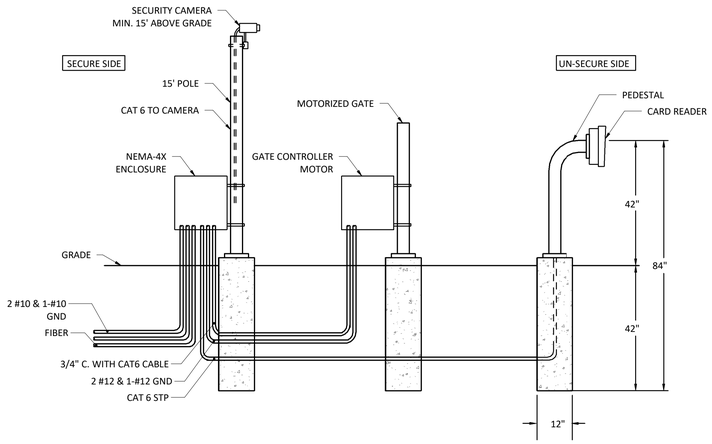
TAG	SIZE	COVER LABEL
HH-1	24X18X12 DIVIDED	ELECTRICAL/FIBER
HH-2	12X12X12	FIBER
HH-3	12X12X12	ELECTRICAL

CAMERA SCHEDULE BASIS OF DESIGN W.W.T.P. SITE

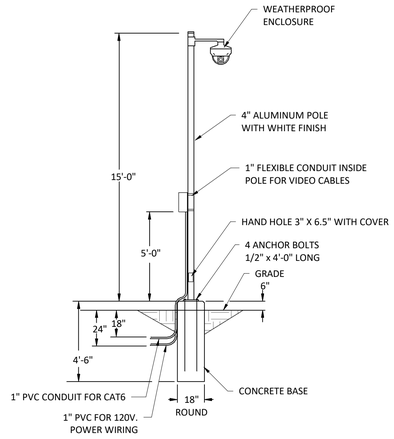
CAMERA	MOUNTING	MODEL	LOCATION	TYPE	MODEL INFO	ACCESSORIES
CAM-1	POLE | 15'	AVIGILON	WTPG	BULLET	5.0-H6SL-B01-30	PLMT-1001, H5AMH-AD-PEND1 I H5AMH-DO-COVR1 or H5AMH-DO-COVR1-SMOKE I WLMT-1001 I Optional,H4AMH-AD-IRIL1, AWA-CLD-5YR

TECHNOLOGY SCHEDULE W.W.T.P. SITE

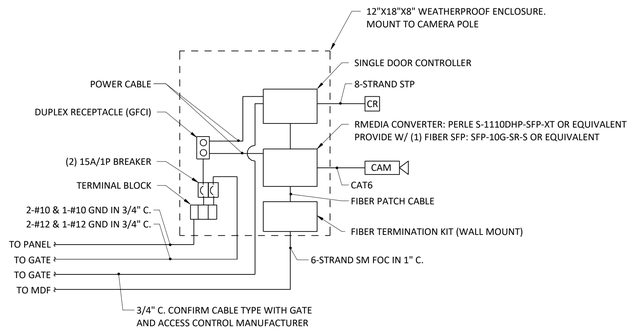
LABEL	LOCATION	BRAND	DESCRIPTION	PART #	NOTES
MED-CONV	NEMA-4X ENCLOSURE	CISCO CATALYST	MEDIA CONVERTER	PERLE S-1110DHP-SFP-XT OR EQUIVALENT	PROVIDE DIN RAIL FOR MOUNTING IN ENCLOSURE. PROVIDE PLUG-IN POWER SUPPLY. PROVIDE FIBER SFP.
SFP	NETWORK SWITCH	SEMTECH	SMALL FORM PLUGGABLE OPTICAL TRANCIEVER	SFP-10G-SR-S	
FH-6W	NEMA-4X ENCLOSURE	PRIMUS CABLE	NEMA-4X ENCLOSURE	WALL MOUNT FIBER ENCLOSURE	PROVIDE LC DUPLEX ADAPTERS PROVIDE LC FIBER PATCH CABLES
FIBER	CONDUIT	QUICKTREX	12 PORT RACK MOUNT COPPER PATCH PANEL	PRO-769-S-IR-6	PROVIDE W/ PULLING EYE LENGTH TO BE DETERMINED BY EC
ENC	CAMERA POLE	VEVOR	NEMA-4X ENCLOSURE 24"X16"X10"	SPT-24X16X10	PROVIDE WITH THE FOLLOWING: BRACKET FOR POL, DIN RAILS, 30A TERMINAL BLOCK, (2) 15A/1P CIRCUIT BREAKERS AND GFCI RECEPTACLE.
ACP-2	NEMA-4X ENCLOSURE	AVIGILON	12 PORT RACK MOUNT COPPER PATCH PANEL	OP-CR-SDCW	PROVIDE DIN RAIL MOUNT AND ACCESS CONTROL CABLING
POLE	SITE	STRONGPOLESW	4" ROUND CAMERA POLE 16'	SP-SM16-DB/B	PROVIDE WITH HAND HOLE AND SONOTUBE FOUNDATION



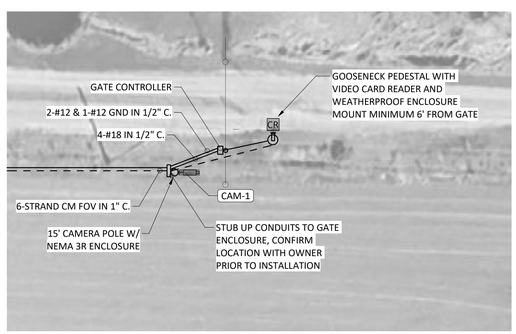
GOOSENECK PEDESTAL GATE 3 — 1/2" = 1'-0" — T-105A



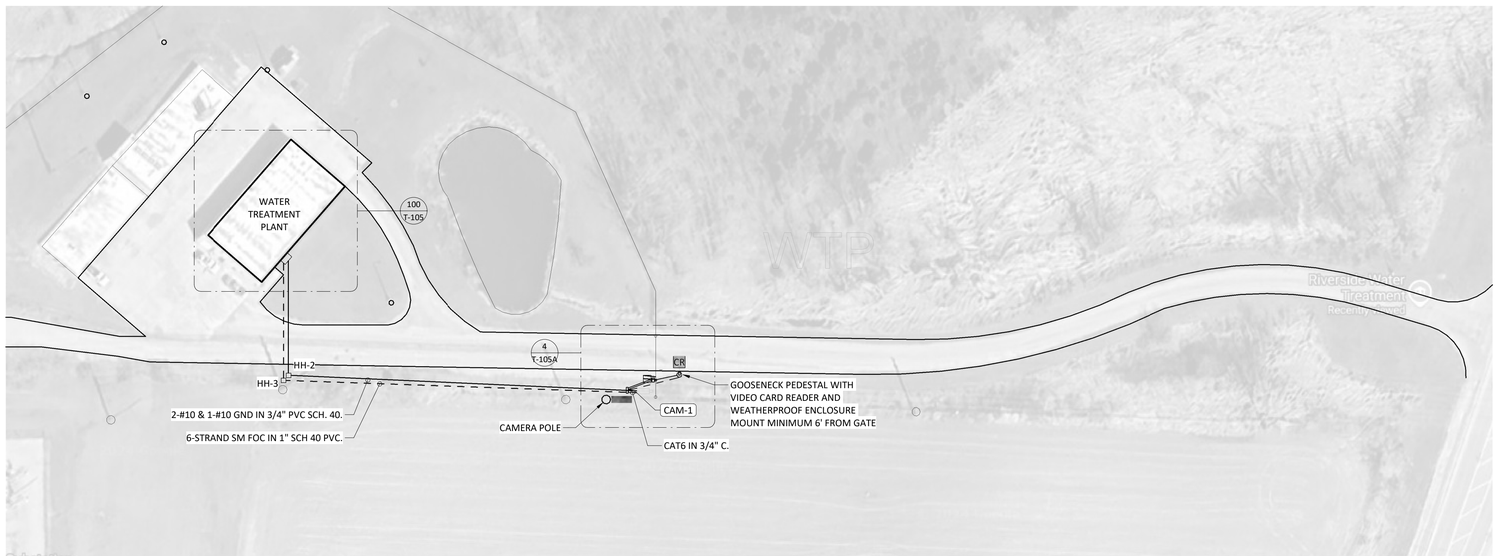
CAMERA POLE AND BASE DETAIL 2 — 1/4" = 1'-0" — T-105A



ACCESS GATE SINGLE LINE DIAGRAM 1 — NTS — T-105A



WATER TREATMENT SITE ENLARGED 4 — NTS — T-105A



WATER TREATMENT SITE — 1/4" = 1'-0" — N

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RIVERSIDE, IA

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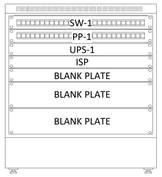
PROJECT NO.	240139

SHEET NAME
WATER TREATMENT PLANT TECHNOLOGY SITE PLAN

T-105A

GENERAL NOTES (WATER TOWER):

1. EXISTING 2" SPARE CONDUITS LOCATED INSIDE WATER TOWER MAY BE USED FOR FIBER ROUTING. IT IS UNKNOWN WHERE THE CONDUITS EXIT WATER TOWER. CONTRACTOR TO TRACE CONDUIT TO VERIFY IF THESE CAN BE USED. IF CONDUIT IS NOT USEABLE CONTRACTOR SHALL PENETRATE EXTERIOR OF TOWER AT LOCATION DESIGNATED BY OWNER. CONTRACTOR TO SEAL ANY PENETRATIONS THROUGH WATER TOWER WITH GASKETED SYSTEM. BASIS OF DESIGN FOR GASKETED SEAL: ROXTEC RS PPS/S SEAL WITH SLF RS OR APPROVED EQUAL.
2. EXTERIOR CAMERA: ROUTE CAT6 CABLE FROM CABINET ALONG WALL USING ADHESIVE CLIPS. BASIS OF DESIGN: DIGIKEY 298-12118-ND. PENETRATE ROOF OF ENTRANCE AND SEAL USING GASKETED SYSTEM. BASIS OF DESIGN: ROXTEC RS PPS/S SEAL WITH SLF RS OR APPROVED EQUAL



NOTE:
1. THE DATA RACK ELEVATION IS INTENDED TO DISPLAY THE TYPICAL EQUIPMENT LAYOUT.
2. THE CONTRACTOR SHALL FOLLOW THE TYPICAL LAYOUT DURING INSTALLATION. IF FOR ANY REASON THERE IS NEED TO MODIFY THE LAYOUT THE CONTRACTOR SHALL CONFIRM WITH DESIGN PROFESSIONAL AND OR THE OWNER PRIOR TO MAKING ANY CHANGES.
3. INCLUDED DATA SCHEDULE TO BE SHOWN ON INSIDE OF DATA CABINET DOOR.
4. RACK TO BE LEVELED ON PAVERS

9U MDF DATA RACK ELEVATION DETAIL — 2 / T-106
NTS

SQUARE-D PANEL. PROVIDE NEW 20A/1P BREAKER IN SPARE SLOT.
LABEL NEW CIRCUIT ON PANEL SCHEDULE

EXISTING ELECTRICAL RACK WITH SQUARE D PANELBOARD

CAMERA SCHEDULE BASIS OF DESIGN WATER TOWER

CAMERA	MOUNTING	MODEL	LOCATION	TYPE	MODEL INFO	ACCESSORIES
CAM-1	WATER TOWER	AVIGILON	WATER TOWER	MULTI-SENSOR 270	15C-H5A-4MH-30	ES-HD-MNT-PLATE, AWA-CLD-5YR

TECHNOLOGY SCHEDULE WATER TOWER

NET-SW	DATA RACK	CISCO MERAKI	NETWORK SWITCH 12 PORT PoE	C9200CX-12P-2X2G-E	PROVIDE WITH BRACKETS OR SHELF FOR RACK MOUNT
PP-12	DATA RACK	RACKMOUNT SOLUTIONS	12 PORT RACK MOUNT COPPER PATCH PANEL	RS-UP12CAT6	
MDF	FLOOR	NAVEPOINT	9U DATA RACK	00406916	PROVIDE WITH BUILT IN FANS AND DUPLEX RECEPTACLE PROVIDE 20A/1P CIRCUIT TO CABINET
UPS	DATA RACK	TRIPPLITE	1.5KVA	SMART1500RT1U	PROVIDE WITH BRACKETS FOR RACKMOUNTING

NOTES: FOR ALTERNATE #1 ON PREMISES SOLUTION, PROVIDE NVR FOR SURVEILLANCE CAMERAS. NVR MINIMUM STORAGE SHALL BE 12TB AND HAVE AT LEAST 8 PORTS.

WATER TOWER — 1 / T-106
NTS

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SHEET NAME
WATER TOWER TECHNOLOGY PLAN

T-106

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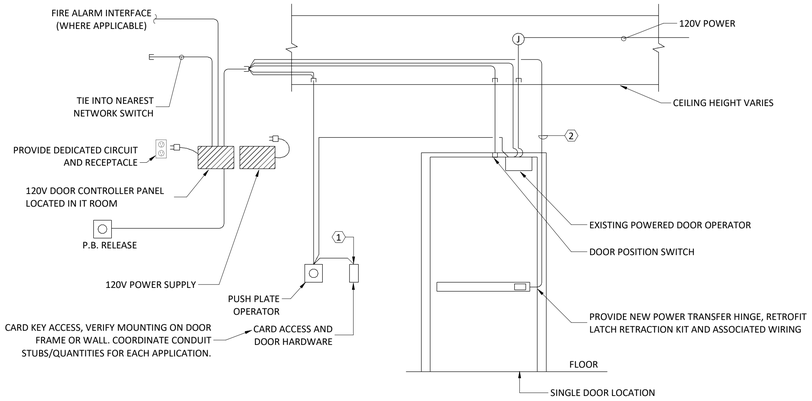


GENERAL NOTES:

(TYPICAL ACCESS DOOR DIAGRAM ONLY)

A DETAIL REPRESENTS ALL HARDWARE OPTIONS. QUANTITY AND TYPE OF DEVICES VARY PER LOCATION AS INDICATED ON PLAN. PROVIDE COMPLETE ROUGH-IN CONNECTIONS PER LOCATION.

B COORDINATE SHOP DRAWING SUBMITTAL AND WIRING DIAGRAMS FOR EACH POWER ASSISTED/ACCESS DOOR LOCATION WITH GENERAL CONTRACTOR AND CARD ACCESS MANUFACTURER.

C CONTRACTOR SHALL CONFIRM DOOR TYPES AND MANUFACTURER FOR EACH DOOR SHOWN WITH A WIRED OR WIRELESS CARD READER. CONTRACTOR SHALL COORDINATE WITH DOOR MANUFACTURER TO ENSURE COMPATIBILITY WITH ACCESS CONTROL EQUIPMENT BEING PROVIDED PRIOR TO ORDERING MATERIAL.

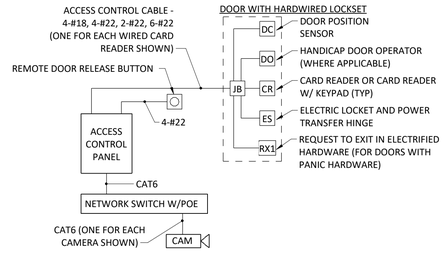
D CONTRACTOR SHALL, TO THE BEST OF THEIR ABILITIES, CONCEAL CONDUIT IN WALLS OR ABOVE CEILINGS. IN INSTANCES WHERE CONCEALING IS NOT VIABLE, SURFACE MOUNT CONDUIT IS ACCEPTABLE. CONTRACTOR SHALL DISCUSS ROUTING OPTIONS, AND BE GIVEN APPROVAL BY OWNER PRIOR TO INSTALLING SURFACE MOUNT CONDUITS.

KEYNOTES

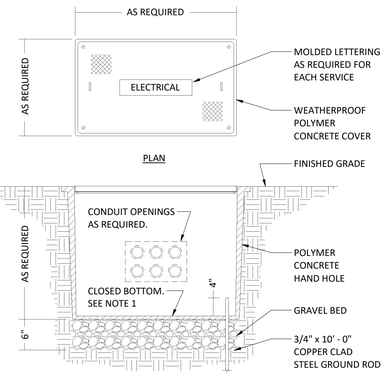
1. PROVIDE ROUGH-IN FOR CARD READERS. PROVIDE SINGLE GANG FLUSH BOX AT 48-INCHES AFF AND 6-INCHES FROM DOOR FRAME WITH 1/2" CONDUIT CONCEALED IN WALL STUBBED INTO ACCESSIBLE CEILING SPACE WITH BUSHING IN AREAS WITHOUT CEILINGS.

2. PROVIDE 1/2" CONDUIT CONCEALED IN WALL FROM DOOR STRIKE DEVICE STUBBED INTO ACCESSIBLE CEILING SPACE WITH BUSHING WHERE POWERED DOOR STRIKE IS SPECIFIED. IN AREAS WITHOUT CEILINGS, STUB ADJACENT FROM STUBS FROM KEYNOTES 1. DOOR STRIKE CONNECTIONS AND CABELING TO BE BY OTHERS.

TYPICAL DOOR ROUGH-IN DETAIL — NTS — 5 / T-501



ACCESS CONTROL & CAMERA WIRING DIAGRAM — NTS — 3 / T-501

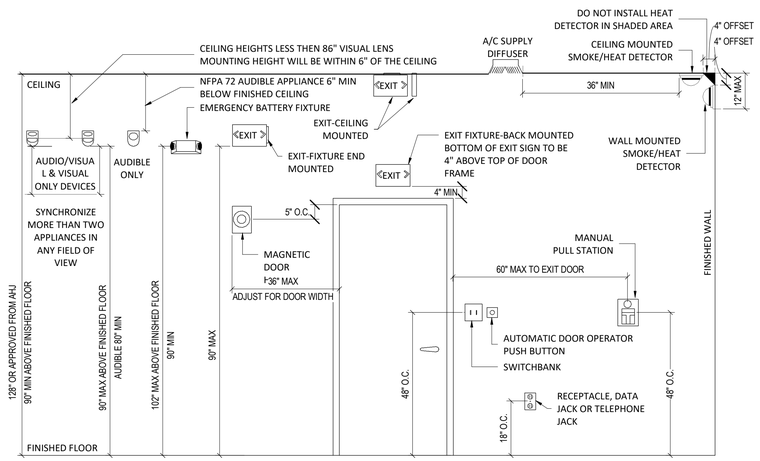


NOTES:

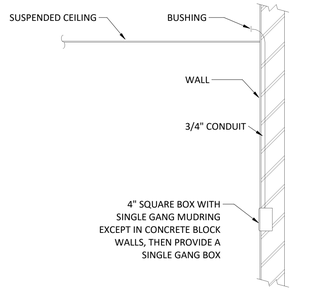
ELEVATION

1. ALL HANDHOLES SHALL BE PROVIDED WITH A CLOSED BOTTOM, UNLESS OTHERWISE INDICATED ON PLANS.
2. HANDHOLES 12" x 24" AND LARGER SHALL HAVE FACTORY-INSTALLED INSERTS FOR CABLE RACKS AND PULLING-IN IRONS.
3. FOR ALL ADDITIONAL REQUIREMENTS REFER TO SPEC SECTION 260543.
4. HANDHOLES CONTAINING DATA AND POWER SHALL BE DIVIDED

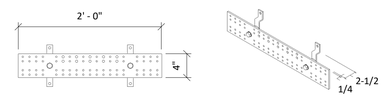
TYPICAL HANDHOLD DETAIL — NTS — 6 / T-501



TYPICAL MOUNTING HEIGHTS — NTS — 4 / T-501



COMPUTER STUB UP DETAIL — NTS — 2 / T-501



PROVIDE TGB (TELECOMMUNICATIONS GROUND BAR KIT) HARGER #TGBI14424TMGBKT OR EQUAL

TELECOMMUNICATION GROUND BAR KIT - 24" — NTS — 1 / T-501

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RIVERSIDE, IA

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BID

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SHEET NAME
TECHNOLOGY SCHEDULE AND DETAILS

T-501

RESOLUTION #2025-XX

RESOLUTION TO APPROVE FINAL PLANS AND RELEASE FOR BID LETTING FOR THE SECURITY AND ACCESS CONTROLS PROJECT

WHEREAS, the City Of Riverside, Iowa, held a public hearing on the proposed drawings, specifications, form of contract, estimated costs, and bid letting process for the Security and Access Controls Project for the City of Riverside, Iowa on February 18th, at 6:00 pm in the City Council Chambers located at the Riverside City Hall, 60 Greene Street, Riverside, Iowa.

WHEREAS, the City Council will receive and consider bids for said construction and will be opened at 2:00 pm on March 14th, 2025 at Riverside City Hall, 60 Greene Street, Riverside, Iowa.

NOW, THEREFORE, BE IT RESOLVED, the City of Riverside City Council, hereby approve the final plans and release the Security and Access Controls Project for bid letting.

It was moved by Councilperson Rogerson, seconded by Councilperson Kiene to approve the foregoing resolution.

Roll Call: Rogerson, Kiene, Schneider, Mills

Ayes:

Nays:

Absents:

PASSED AND APPROVED by the Riverside City Council on this 18th day of February 2025.

Signed: _____ Date: _____

Allen Schneider, Mayor

Signed: _____ Date: _____

Stephanie Thomann, City Clerk

WASHINGTON COUNTY SHERIFF'S OFFICE
Town Report

Filter:datestart-20250101:dateend-20250131:Zone-criv

DateTime	CFS	Call Type	Zone
01/01/2025 21:20:13	2500036	TRAFFIC-DISABLED VEHICLES	CRIV

Agency: Washington County Sheriff's Office

Address: 3027 HIGHWAY 22

CityStateZip: RIVERSIDE, IA 52327

details:

[01/01/2025 21:20:59]
92-14 REPORTS BEING OUT WITH A VEHICLE AT A BUSINESS. SUBJECT WAS STOPPED LOOKING FOR HER CHILD.

01/02/2025 13:39:54	2500063	WELFARE CHECK	CRIV

Agency: Washington County Sheriff's Office

Address: 1000 HIGHWAY 218

CityStateZip: RIVERSIDE, IA 52327

details:

[01/02/2025 13:45:15]
CALLER REPORTS SOMEONE WALKING NORTHBOUND ON 218 AT THE RIVERSIDE EXIT. 92-19 RESPONDED AND MADE CONTACT WITH THE SUBJECT. JOHNSON COUNTY GAVE HER A RIDE TO WALMART IN IOWA CITY.

01/03/2025 17:55:38	2500120	PUBLIC SERVICE/CONTACTS	CRIV

Agency: Washington County Sheriff's Office

Address: 3184 HIGHWAY 22

CityStateZip: RIVERSIDE, IA 52327

details:

[01/03/2025 17:59:16]
DEPUTY REPORTS BEING OUT SERVING A SUBPOENA FOR VIDEO EVIDENCE. 92-15 COMPLETED.

01/03/2025 21:32:33	2500141	FRAUD	CRIV

Agency: Washington County Sheriff's Office

Address: 3184 HIGHWAY 22

CityStateZip: RIVERSIDE, IA 52327

details:

[01/03/2025 21:34:44]
CALLER REPORTS A GUEST AT THE CASINO IS TRYING TO USE SOMEONE ELSES ID AND THEY WOULD LIKE THE GUEST TO BE

CHARGED. 92-9 RESPONDED. CITATION ISSUED TO PECSON,TYLER L (21) OF SHAMBURG IL FOR UNLAWFUL USE OF LICENSE OR ID CARD.

01/03/2025 23:55:04 2500147 TRAFFIC STOP-SERIOUS CRIV

Agency: Washington County Sheriff's Office

Address: 3078 HIGHWAY 22

CityStateZip: RIVERSIDE, IA 52327

details:

[01/03/2025 23:55:54]
DEPUTY REPORTS CONDUCTING A VEHICLE STOP WITH LIC/OJW424. 92-16 ARRESTED NAM/NOLL,RICHARD EUGENE (47) OF MUSCATINE. OFFENSE/DRIVING WHILE REVOKED FOR OPERATING WHILE INTOXICATED, PROVIDING FALSE INFORMATION AND NO PROOF OF INSURANCE. THE VEHICLE WAS LEFT AT THE SITE OF THE STOP.

01/05/2025 06:11:22 2500202 FRAUD CRIV

Agency: Washington County Sheriff's Office

Address: 3070 HIGHWAY 22

CityStateZip: RIVERSIDE, IA 52327

details:

[01/05/2025 06:17:19]
CALLER REPORTS A WOMAN TRYING TO PAY WITH A FRAUDULANT 100 DOLLAR BILL. 92-19 RESPONDED AND SPOKE WITH THE CALLER. DOCUMENTATION.

01/06/2025 11:11:29 2500256 ANIMAL-BITE CRIV

Agency: Washington County Sheriff's Office

Address: 102 KLEOPFER AVE

CityStateZip: RIVERSIDE, IA 52327

details:

[01/06/2025 11:14:37]
CALLER REPORTS A DOG BITE THAT OCCURRED ON 1/4/25. 92-8 RESPONDED. REPORT FILED.

01/07/2025 21:17:59 2500322 THEFT-OTHER CRIV

Agency: Washington County Sheriff's Office

Address: 3070 HIGHWAY 1

CityStateZip: WASHINGTON, IA 52353

details:

[01/07/2025 21:19:36]

CALLER REPORTED HIS CAR KEYS WERE STOLEN FROM HIM AFTER A DISAGREEMENT // 92-14 & 92-13 RESPONDED // 92-14 ADVISE KEYS WERE LOCATED BETWEEN THE SEATS AND THEY WILL BE ON THEIR WAY.

01/09/2025 17:40:11 2500397 BURGLARY-RESIDENTIAL CRIV

Agency: Washington County Sheriff's Office

Address: 41 E 1ST ST

CityStateZip: RIVERSIDE, IA 52327

details:

[01/09/2025 17:41:57]
CALLER REPORTS COMING HOME AND FINDING THE RESIDENCE BROKEN INTO. 92-20 RESPONDED. UNDER INVESTIGATION.

01/10/2025 08:17:54 2500416 FRAUD CRIV

Agency: Washington County Sheriff's Office

Address: 3021 HIGHWAY 22

CityStateZip: RIVERSIDE, IA 52327

details:

[01/10/2025 08:20:11]
CALLER REPORTS RECEIVING A COUNTERFEIT $100 BILL FROM A FEMALE CUSTOMER AROUND 1800 THE EVENING BEFORE. 92-8 RESPONDED AND REVIEWED FOOTAGE OF THE INCIDENT, SUBJECT, AND VEHICLE. DOCUMENTATION.

01/10/2025 18:34:23 2500446 PUBLIC SERVICE/CONTACTS CRIV

Agency: Washington County Sheriff's Office

Address: 3184 HIGHWAY 22

CityStateZip: RIVERSIDE, IA 52327

details:

[01/10/2025 18:35:03]
DEPUTY REPORTS BEING OUT WITH A VEHICLE IN THE CASINO PARKING LOT. 92-13 ADVISED THERE ARE TWO DOGS IN THE VEHICLE, NO ISSUES.

01/10/2025 20:17:48 2500452 PUBLIC SERVICE/CONTACTS CRIV

Agency: Washington County Sheriff's Office

Address: 3184 HIGHWAY 22

CityStateZip: RIVERSIDE, IA 52327

details:

[01/10/2025 20:18:17]

DEPUTY REPORTS BEING OUT WITH A MALE SUBJECT WHO IS HAVING DIFFICULTY LOCATING HIS VEHICLE. 92-13 ASSISTED THE SUBJECT IN FINDING THE VEHICLE IN THE PARKING LOT.

01/13/2025 20:00:19 2500571 SEX OFFENDER-CHECK CRIV

Agency: Washington County Sheriff's Office

Address: 111 E 4TH ST

CityStateZip: RIVERSIDE, IA 52327

details:

[01/13/2025 20:01:15]
DEPUTY REPORTS CONDUCTING SEX OFFENDER CHECK. 92-7 ADVISED LOCATED AND NO CHANGES.

01/14/2025 09:02:25 2500588 PUBLIC SERVICE/CONTACTS CRIV

Agency: Washington County Sheriff's Office

Address: 3126 HIGHWAY 22

CityStateZip: RIVERSIDE, IA 52327

details:

[01/14/2025 09:02:49]
OFFICER REPORTS BEING OUT WITH A SUBJECT PARKED AT THE RIVERSIDE WATER TREATMENT PLANT.

92-19 ADVISED THE SUBJECT TO MOVE ALONG.

01/16/2025 21:21:18 2500739 TRAFFIC-PARKING COMPLAINT CRIV

Agency: Washington County Sheriff's Office

Address: W 2ND ST&N GLASGOW ST

CityStateZip: RIVERSIDE, IA 52327

details:

[01/16/2025 21:22:06]
DEPUTY ADVISED BEING OUT WITH VEHICLE PARKED IN THE MIDDLE OF THE ROAD. 92-13 ADVISED THE OWNER CAME AND MOVED THE VEHICLE.

01/16/2025 21:23:11 2500740 DP&Q CRIV

Agency: Washington County Sheriff's Office

Address: 3184 HIGHWAY 22

CityStateZip: RIVERSIDE, IA 52327

details:

[01/16/2025 21:25:13]
CALLER REPORTED A MALE SUBJECT AT THE MAIN ENTRANCE IS OUT OF CONTROL // 92-13, 92-14 & 92-11 RESPONDED // 92-13 ADVISED REPORT TO BE FILED

01/18/2025 14:46:55	2500817	SUSPICIOUS ACTIVITY	CRIV

Agency: Washington County Sheriff's Office

Address: 40 E 2ND ST

CityStateZip: RIVERSIDE, IA 52327

details:

[01/18/2025 14:48:37]
CALLER REPORTS THERE IS A MALE SUBJECT STANDING AT HER DOOR. THEY DO NOT KNOW WHO IT IS.

92-7 AND 92-19 RESPONDED. DEPUTY ADVISED THAT HE ISSUED A NO TRESPASS ORDER TO NAME/MARTINEZ,MARCO ANTONIO OF CORALVILLE.

01/18/2025 21:00:43	2500833	TRAFFIC-DRIVING COMPLAINT	CRIV

Agency: Washington County Sheriff's Office

Address: 3184 HIGHWAY 22

CityStateZip: RIVERSIDE, IA 52327

details:

[01/18/2025 21:02:52]
CALLER REPORTS POSSIBLE INTOXICATED DRIVER LEAVING THE PARKING LOT // 92-16 RESPONDED BUT WAS UNABLE TO LOCATE THE VEHICLE.

01/19/2025 13:16:49	2500847	PUBLIC SERVICE/CONTACTS	CRIV

Agency: Washington County Sheriff's Office

Address: 41 N GREENE ST

CityStateZip: RIVERSIDE, IA 52327

details:

[01/19/2025 13:17:26]
DEPUTY REPORTS BEING FLAGGED DOWN BY A SUBJECT. THEY ADVISED THAT THERE WERE JUVENILES IN THE LAUNDROMAT PLAYING ON THE WASHERS/DRYERS AND HANGING ON THE APPLIANCES DOORS.

92-8 RESPONDED AND SPOKE WITH THE JUVENILES AND THEIR GUARDIANS. ADVISED THEM OF THE COMPLAINT AND THEY LEFT THE PROPERTY WITHOUT INCIDENT.

01/22/2025 02:04:00	2500941	TRAFFIC STOP-SERIOUS	CRIV

WASHINGTON COUNTY SHERIFF'S OFFICE
Town Report

Filter:datestart-20250101:dateend-20250131:Zone-criv

Agency: Washington County Sheriff's Office

Address: VINE AVE&HIGHWAY 22

CityStateZip: RIVERSIDE, IA 52327

details:

[01/22/2025 02:04:20]
92-13 REPORTS A VEHICLE STOP AT VINE AVE ON HIGHWAY 22 WITH LIC/MUZ833.
ARREST: WALTON,TROY ALLEN (48) OF MARION OFFENSE: DRIVING UNDER SUSPENSION X11AND UNSAFE APPROACH TO EMERGENCY VEHICLE.

VEHICLE WAS SECURED ALONG THE ROADWAY, OPERATOR WILL ARRANGE FOR SOMEONE TO PICK IT UP.

01/23/2025 13:10:23 2500995 HANG UP 911 CALLS CRIV

Agency: Washington County Sheriff's Office

Address: 300 E RIVER ST

CityStateZip: RIVERSIDE, IA 52327

details:

[01/23/2025 13:11:30]
DISPATCH RECEIVED A HANG UP 911 CALL. NO ANSWER UPON CALL BACK. DISPATCH WAS ABLE TO MAKE CONTACT AND THE SUBJECT WAS OKAY.

01/23/2025 18:22:06 2501006 TRAFFIC-DISABLED VEHICLES CRIV

Agency: Washington County Sheriff's Office

Address: HIGHWAY 22&VINE AVE

CityStateZip: RIVERSIDE, IA 52327

details:

[01/23/2025 18:23:06]
DEPUTY REPORTS BEING OUT WITH AN UNOCCUPIED VEHICLE ON HIGHWAY 22 THAT WAS A ROAD HAZARD. LIC/ OZY213. BULLTOWN RESPONDED AND TOWED THE VEHICLE. VEHICLE TO BE RELEASED WHEN TOW BILL PAID. SIN/3485825.

01/24/2025 18:09:38 2501053 PUBLIC SERVICE/CONTACTS CRIV

Agency: Washington County Sheriff's Office

Address: 329 SYCAMORE ST

CityStateZip: RIVERSIDE, IA 52327

details:

[01/24/2025 18:11:04]

CALLER ON 911 WITH LANGUAGE BARRIER, THEN SAID THEY DID NOT WANT 911. 92-19 AND 92-13 RESPONDED. NO PROBLEM. CALLE DID NOT NEED ANY ASSISTANCE, HE WAS AN AMAZON DRIVER AND NEEDED HELP WITH THE APP.

01/25/2025 14:23:18 2501100 ILLEGAL DUMPING CRIV

Agency: Washington County Sheriff's Office

Address: 3078 HIGHWAY 22

CityStateZip: RIVERSIDE, IA 52327

details:

[01/25/2025 14:29:37]
CALLER REPORTS A SUBJECT IN A GRAY FORD PICKUP LIC/MUE147 DUMPED A BAG OF CLOTHING AT THE CAR WASH, MANAGEMENT WOULD LIKE THE PERSON TO RETURN AND RETREIVE THE ITEMS. 92-11 MADE CONTACT WITH THE REGISTERED OWNER WHO STATED IT IS SEAT COVERS AND HE LOST THEM, HE IS RETURNING TO PICK THEM UP.

01/26/2025 15:53:07 2501154 FIREWORKS CRIV

Agency: Washington County Sheriff's Office

Address: 381 E HICKORY ST

CityStateZip: RIVERSIDE, IA 52327

details:

[01/26/2025 15:55:01]
REPORTS THE HOMEOWNER ILLEGALLY LIGHTING OFF FIREWORKS. DEPUTY RESPONDED AND SPOKE TO THE HOMEOWNER ABOUT THE CITY ORDINANCE ON FIREWORKS.

01/26/2025 18:52:24 2501163 SEX OFFENDER-CHECK CRIV

Agency: Washington County Sheriff's Office

Address: 36 N WASHBURN ST

CityStateZip: RIVERSIDE, IA 52327

details:

[01/26/2025 18:52:53]
DEPUTY REPORTS CONDUCTING AN SOR CHECK. DEPUTY REPORTS PRESENT AND NO CHANGES.

01/27/2025 04:55:22 2501180 ASSAULT-DOMESTIC CRIV

Agency: Washington County Sheriff's Office

Address: 3184 HIGHWAY 22

CityStateZip: RIVERSIDE, IA 52327

details:

[01/28/2025 22:28:09]

WASHINGTON COUNTY SHERIFF'S OFFICE
Town Report
Filter:datestart-20250101:dateend-20250131:Zone-criv

Linked to CFS#: 2501271
[01/27/2025 04:57:05]
CALLER REPORTS BEING ASSAULTED BY HER BOYFRIEND AND THEN HE LEFT THEIR ROOM, HIT HER IN THE FACE, DENIED MEDICAL 92-13 & 92-17 RESPONDED. REPORT FILED.

01/28/2025 16:35:34 2501250 TRAFFIC-DISABLED VEHICLES CRIV

Agency: Washington County Sheriff's Office

Address: 1178 ENTERPRISE DR

CityStateZip: RIVERSIDE, IA 52327

details:
[01/28/2025 16:38:53]
CALLER REPORTS HIS TRUCK BROKE DOWN IN THE MIDDLE OF THE ROADWAY AND IS REQUESTING TRAFFIC CONTROL UNTIL THE TOW TRUCK ARRIVES. DEPUTY RESPONDED. TRUCK IS MOVED FROM ROADWAY.

01/31/2025 20:31:59 2501414 TRAFFIC-DRIVING COMPLAINT CRIV

Agency: Washington County Sheriff's Office

Address: 3184 HIGHWAY 22

CityStateZip: RIVERSIDE, IA 52327

details:
[01/31/2025 20:36:27]
CALLER REPORTS A VEHICLE DRIVING IN THE WRONG LANE, SLOWING DOWN AND SPEEDING UP. DEPUTY RESPONED AND LOCATED THE VEHICLE PARKED IN THE CASINO PARKING LOT UNOCCUPIED.

Date: February 11, 2025

To: Riverside Council

From: Jed Wolf & Branden Havens, Operators & Steve Robinette, Region Manager

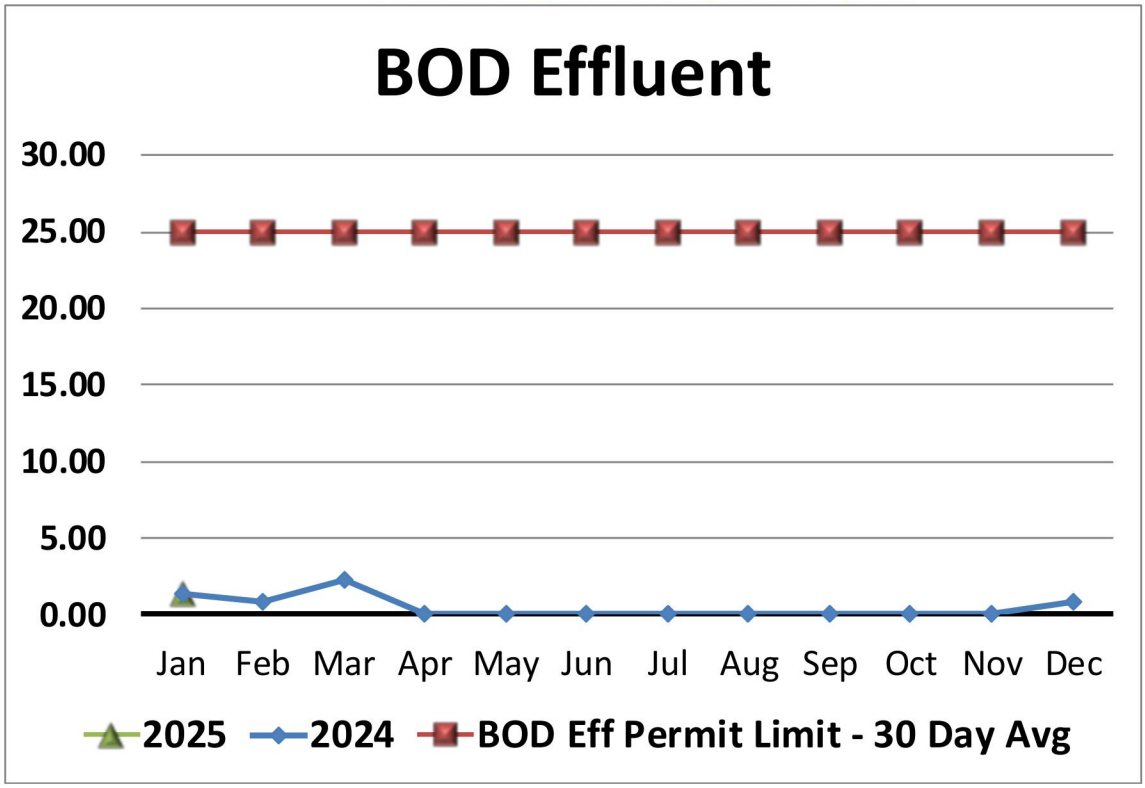
O & M Report: January 2025

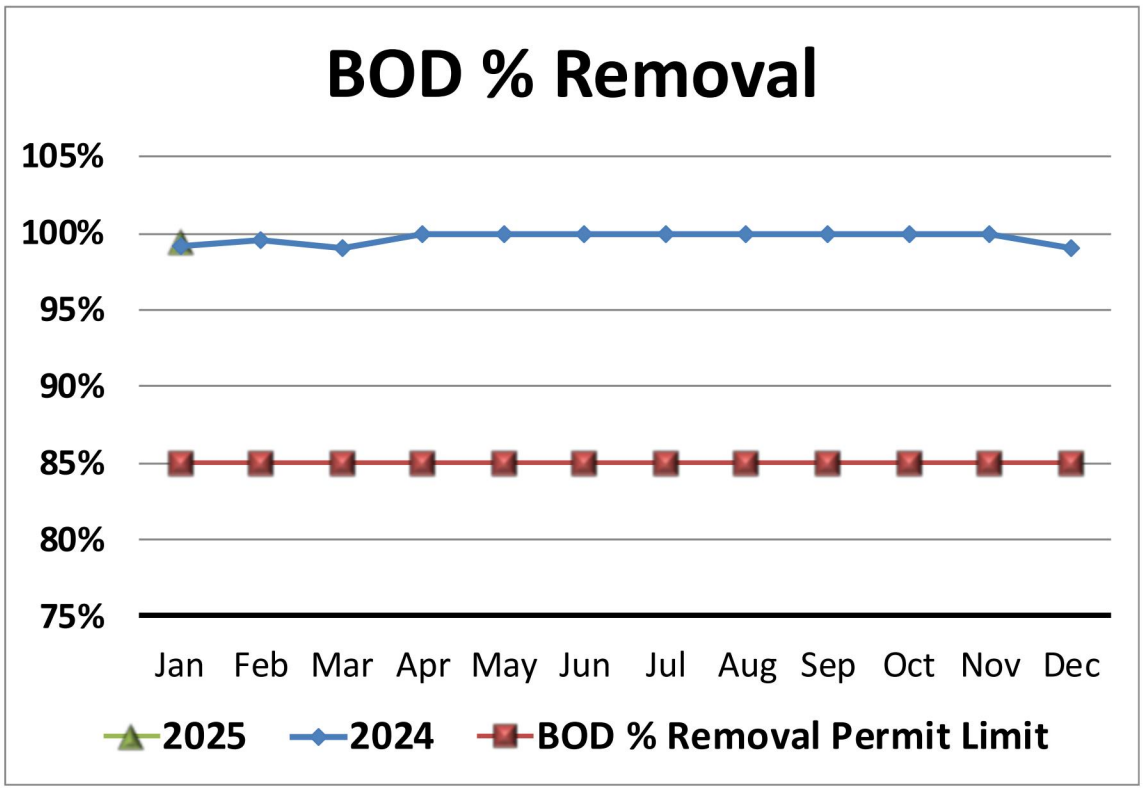
Water Operation & Maintenance

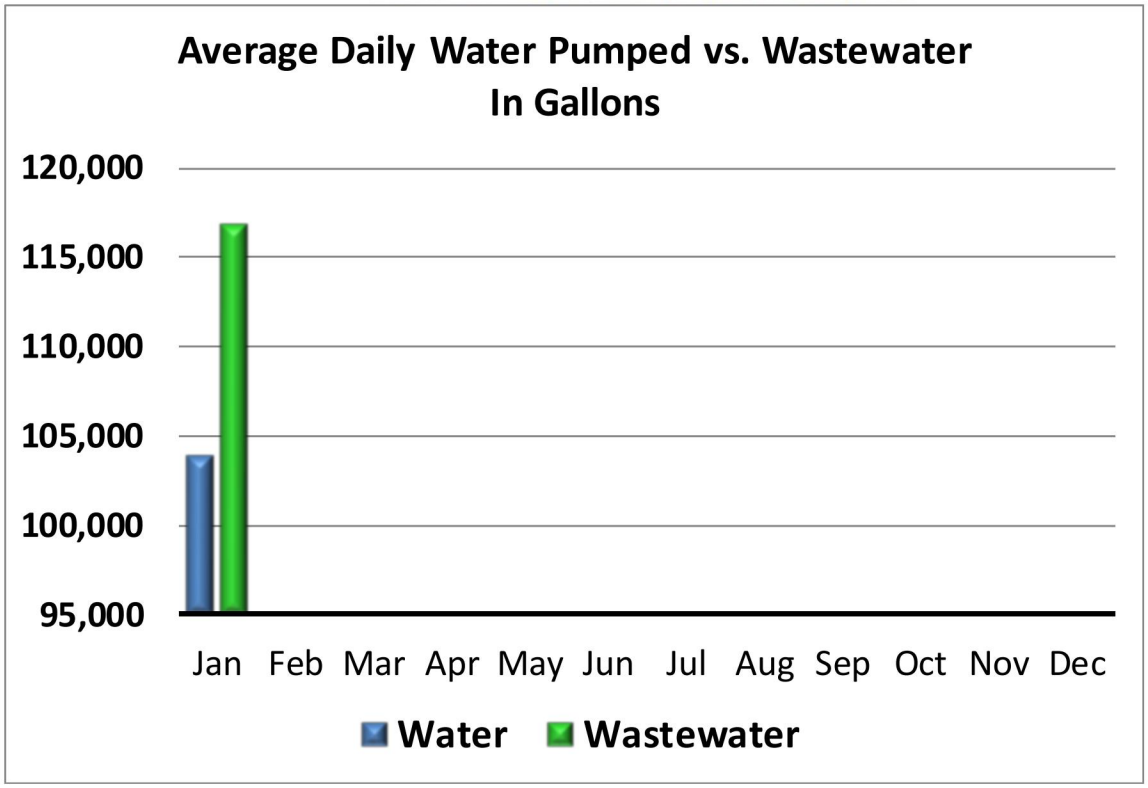
- We scheduled membrane replacement for 2/14 but rescheduled due to inclement weather. We plan to reschedule it in the next couple of weeks.
- Discovered a chlorine leak at the check valve immediately before the injection point. We replumbed that section and installed a new check.
- pH/Conductivity probes fully installed on Raw and Finished piping. LINO recalibrated the system and plans to move the controller to more easily integrate to the SCADA.
- Water plant backflow preventors had their annual testing performed..

Wastewater Operation & Maintenance

- We've been working through the usual struggles at the wastewater plant during the winter but nothing we haven't been able to adapt to. We've taken SBR #2 out of TIMED mode and into DO mode and made some wasting adjustments.
- On 2/9 we discovered DO probe #1 was not transmitting, so we've called LINO to come back in to take a look at it.
- We took quarterly Total Nitrogen and Phosphorus samples..


BOD Effluent
30.00
25.00
20.00
15.00
10.00
5.00
0.00
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
2025
2024
BOD Eff Permit Limit - 30 Day Avg


BOD % Removal
105%
100%
95%
90%
85%
80%
75%
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
2025
2024
BOD % Removal Permit Limit



Contract True-Ups - Current Contract Year				
Item	Budgeted Amount	Amount Spent	% of Budget	% of Time
Chemical Budget	$30,080.00	$13,586.05	45%	58%
Maintenance Budget	$25,066.00	$4,528.81	18%	58%
Total	$55,146.00	$18,114.86	33%	58%

PeopleService INC.
Water & Wastewater Professionals

		January-25	December-24	January-24
Water	**Units**			
Total Monthly Pumped	gallons	3,217,000	3,430,000	3,245,000
Average Daily Pumped	gallons	103,770	128,320	104,677
Maximum Daily Pumped	gallons	144,000	389,000	275,000
Minimum Daily Pumped	gallons	70,000	47,000	13,000
Chlorine				
Chlorine - Total Avg Residual Plant	mg/L	1.34	1.66	1.52
Chlorine - Total Avg Residual System	mg/L	1.00	0.88	0.72
Chlorine - Minimum Required Residual System	mg/L	0.30	0.30	0.30
Chlorine used	gallons	142.50	160.00	157.00
Iron				
Iron - Avg Raw	mg/L	1.46	1.47	1.30
Polyphosphate				
Polyphosphate - Avg Residual	mg/L	0.74	2.81	2.29
Polyphosphate - Recommended Residual	mg/L	1.5-3.0	1.5-3.0	1.5-3.0
Polyphosphate used	gallons	23.00	29.00	54.00
Water Loss				
Water Billed	gallons	2,637,603	2,634,572	2,745,187
Water used in main breaks/hydrant flushing etc..	gallons	0	200,000	0
Water used at city buildings	gallons	41,786	40,515	72,543
Loss	gallons	21%	13%	13%
Wastewater				
BOD				
BOD Influent Avg	mg/L	213	178	164
BOD Effluent Avg	mg/L	1	0.9	1
BOD Eff Permit Limit - 30 Day Avg	mg/L	25	25	25
BOD % Removal	%	99.40%	99.00%	99.10%
BOD % Removal Permit Limit	%	85%	85%	85%
TSS				
TSS Influent Avg	mg/L	113	92	66
TSS Effluent Avg	mg/L	15	14	13
TSS Effluent Permit Limit - 30 Day Avg	mg/L	30	30	30
TSS % Removal	%	87.00%	85.00%	86.10%
TSS % Removal Permit Limit	%	85%	85%	85%
Nitrogen Ammonia				
NA Effluent Avg	mg/L	0	0	1
NA Effluent Permit Limit - 30 Day Avg	mg/L	14	10	14
Influent Flow				
Total Monthly	gallons	3,626,100	5,142,000	3,529,400
Average Daily	gallons	116,842	165,870	113,852
Maximum Daily	gallons	241,500	894,000	282,200
Minimum Daily	gallons	55,300	64,200	61,000
Permit Limit - 30 Day Avg	gallons	444,000	444,000	444,000
Permit Limit - Daily Maximum	gallons	1,425,000	1,425,000	1,425,000

PeopleService INC.
Water & Wastewater Professionals

RIVERSIDE--JANUARY '25

Water Plant Maintenance

Date	Vendor List	Description	Total
1/24/25	First National Bank, VISA	Supplies	$10.59
		Total	**$10.59**

Water System Maintenance

Date	Vendor List	Description	Total
1/2/25	USA Bluebook	Hydrant Gaugt, PH Electrode	$668.70
		Total	**$668.70**

Wastewater Plant Maintenance

Date	Vendor List	Description	Total
		Total	**$0.00**

Wastewater System Maintenance

Date	Vendor List	Description	Total
1/6/25	Microbac Labs	Environmental Fees	$52.50
		Total	**$52.50**

Water Plant Maintenance	$10.59
Water System Maintenance	$668.70
W/W Plant Maintenance	$0.00
W/W System Maintenance	$52.50
Month Total	$731.79

Annual Maintenance Budget	$25,066.00
Total Maintenance Dollars Spent Year to Date	**$4,528.81**
Percent Maintenance Budget Spent Year to Date	**18%**

PeopleService INC.
Water & Wastewater Professionals

RIVERSIDE - JANUARY '25

Water System Chemicals

Date	Vendor List	Description	Total
		Total	**$0.00**

Wastewater System Chemicals

Date	Vendor List	Description	Total
		Total	**$0.00**

Water System Chemicals	$0.00
W/W System Chemicals	$0.00
Month Total	$0.00
Annual Chemical Budget	$30,080.00
Total Chemical Dollars Spent Year to Date	**$13,586.05**
Percent Chemical Budget Spent Year to Date	**45%**

Maintenance Month Total	$731.79
Chemical Month Total	$0.00
Month Total	**$731.79**
Annual Budget	**$55,146.00**
Total Spent Year to Date	**$18,114.86**
Percent Budget Spent Year to Date	**33%**

PeopleService INC.
Water & Wastewater Professionals

Work Orders Completed

Date completed	Equipment	Task
1/24/2025	BLOWERS	Monthly PM
1/24/2025	WWTP GENERATOR	Monthly PM
1/21/2025	LIFT STATION #1	LS Monthly PM
1/21/2025	LIFT STATION #2	LS Monthly PM
1/21/2025	LIFT STATION #3	LS Monthly PM
1/21/2025	LIFT STATION #4	LS Monthly PM
1/21/2025	LIFT STATION #5	LS Monthly PM
1/24/2025	EQ BASIN STATION	LS Monthly PM
1/24/2025	EFFLUENT SAMPLER	Monthly PM
1/24/2025	INFLUENT SAMPLER	Monthly PM
1/24/2025	SCREEN UNIT	Monthly PM
1/17/2025	UV SYSTEM	Monthly PM
1/24/2025	FIRE EXTINGUISHERS	Inspection
1/21/2025	Lift Station Generator #1	Generator Monthly
1/21/2025	Lift Station Generator #2	Generator Monthly
1/21/2025	Lift Station Generator #4	Generator Monthly
1/21/2025	Lift Station Generator #5	Generator Monthly
1/21/2025	Lift Station Generator #3	Generator Monthly
1/27/2025	FILTER	Monthly PM
1/27/2025	CARTRIDGE FILTERS	Monthly PM
1/24/2025	DEHUMIDIFIERS	Monthly PM
1/24/2025	WATER PLANT GENERATOR	Monthly PM
1/17/2025	HIGH SERVICE PUMPS	Monthly PM
1/16/2025	FIRE EXTINGUISHERS	Inspection

ENGINEER'S REPORT

PROJECT: City of Riverside
DATE: February 13, 2025
TO: City Council
TOPIC: Project Updates

2024 Riverside PCC Improvements

- Sidewalk (curb ramp) replacement at the intersection of Blackberry and Sycamore has been added to this project.
- Coordination is taking place with Big Iron on railing and stair fabrication.

Community Center

- Council Work Sessions took place on 2/10/25, in which OPN and Axiom presented several floorplan and footprint options for the building.
- OPN will finalize into two options and Axiom will provide a site layout for each of those options.
- A Steering Committee kick-off meeting should be scheduled.

Cherry Lane Extension

- This project is out for bid, and pre-bid meeting has been held.
- Addendum #1 will be sent out today.
- Land swap and plats have been approved by School District.
- Bids are due on Thursday, 2/20/25.

Pickleball Courts

- This project is out for bid, and pre-bid meeting has been held.
- Addendum #1 will be sent out today.
- Bids are due on Thursday, 2/20/25.

CDBG Downtown Revitalization

- Building Owner's meeting has been completed.
- CDBG Administrative contract has been signed by the City.
- Axiom expects to obtain signed contracts by all Building Owners this week.

Building Inspection

- Axiom has been and will continue to assist the City of Riverside with Building Inspection services until a new building inspector has been contracted.
- Axiom has subcontracted with Terry Goerdt to provide electrical inspection to date.

Security and Access Controls Project

- Plans and specifications have been developed and provided.
- Public Hearing and approval of plans and specifications to be acted on.
- Bids due March 14, 2025.

Miscellaneous

- MidAm gas request was evaluated at 520 E Hickory Street and a new Utility Easement Exhibit provided.
- Sidewalk grade separation evaluated at 191 Rose Street, and contractor contacted regarding remediation based on being within the Performance and Maintenance Bond time period.

SECURITY AND ACCESS CONTROLS – PROPOSED REVISED BID DATE		
Milestone/Task	**Date**	**Notes**
Axiom to send the Notice of Public Hearing to City	Fri Jan 31, 2025	
City to Set Public Hearing for Council Approval on Plans/Specs for February 18	Mon Feb 3, 2025	Set PH for Council Approval at Council Meeting: Tues Feb 18, 2025
City to send the Notice to Bidders and Public Hearing to the Paper (The News)	Wed Feb 5, 2025	*The News: Publication Day is Thursday. Items for Publication due Friday the week prior to Publication.*
Construction Documents to City for Council Approval	Wed Feb 12, 2025	For City Council Mtg: Tue Feb 18, 2025.
Publish Notice of Public Hearing (Posting Date)	Thu Feb 13, 2025	City to Post w/Paper {No less than 4 days, but no more than 20 days prior to Public Hearing}
Public Hearing	Tue Feb 18, 2025	Approval of CD Plans/Project Manual
City to Set Public Hearing for Bid Review and Approval for ~~March 17~~ Apr 7, 2025	Tue Feb 18, 2025	Set PH for Bid Review and Approval at Council Meeting: ~~Monday Mar 17, 2025~~ Monday Apr 7, 2025
City to send Notice of Public Hearing to the Paper (The News)	Wed Feb 19, 2025	*The News: Publication Day is Thursday. Items for Publication due Friday the week prior to Publication.*
Axiom to send Notice to Bidders/Public Hearing to MBI Online	Wed Feb 19, 2025	{No less than 13 days, but no more than 45 days prior to bids due)
Issued for Bid Plan Set & Project Manual	Wed Feb 19, 2025	On Quest CDN for Bidders.
MBI Online to post the Notice to Bidders/Public Hearing to MBI Online	Thu Feb 20, 2025	15 Days prior to Bids Due

Pre-Bid Meeting	Thu Feb 27, 2025	2:00PM at City Council Chambers
Publish Notice of Public Hearing (Posting Date)	Thu Feb 27, 2025	The News (Meets 13/45 Requirement)
Bids Due	~~Fri Mar 7, 2025~~ Fri Mar 14, 2025	By 2:00PM CT
Bid Opening	~~Fri Mar 7, 2025~~ Fri Mar 14, 2025	2:00PM CT Virtual Bid Opening at City Council Chambers
Review Bids	~~Fri Mar 7, 2025~~ ~~to Tue Mar 11, 2025~~ Fri Mar 14, 2025 to Tues Apr 1, 2025	City Internal Review
Public Hearing	~~Mon Mar 17, 2025~~ Mon Apr 7, 2025	Approval of Bid/Award Contractor
Notice to Proceed	Within 7 days of Council Mtg	City Council Mtg: ~~Mon Mar 17, 2025~~ Mon Apr 7, 2025
Early Start Date	Following NTP ~~~Fri Mar 21, 2025~~ Mon Apr 11, 2025	
Substantial Completion	Tues July 15, 2025	
Final Completion	Thu July 31, 2025	

Riverside 2025

2025 Municipal Grant Application

City of Riverside

Mr Cole Smith
60 N Greene St
PO Box 188
Riverside, IA 52327

cityclerk@riversideiowa.gov
O: 319-648-3501

Mr Cole Smith

60 Greene St
PO Box 188
Riverside, IA 52327

cityadmin@riversideiowa.gov
O: 319-648-3501

Application Form

General Information

City Name 2025*

Write your city and 2025.

Example: Wellman 2025

Riverside 2025

Project List and description*

Provide a brief description of the project/projects. **If you have more than one project, please number them and include all of them in one application.**
After each project put the WCRF municipal grant amount to be used for that project. Also state whether or not the project has been started, not yet started or ongoing.

Example:
1. Baseball field turf repair $9,750. *Started not complete
...we are repairing the grass at baseball field #4 because worms destroyed the outfield....the grass seed cost.... we plan to reseed in April...etc.

2. City well replacement $50,000.00 *Not yet started
the city is in negotiation with ABC company to replace the City Well and anticipate it costing...$$ more than we have, so we will be using the Riverboat Foundation grant to help fund the City Well...

3. Park benches and trees $16,000 *Ongoing
...the city plans to continue placing park benches and planting shade trees in city park...

Riverside Community Center - $91,533.87
The Riverside Community Center has been a longtime community goal that has been backed by the donations and efforts of several organizations and community members. Currently, the City of Riverside has reserved approximately $1.4 million for the project. These funds have primarily come from private donations and City contributions to the project. The total cost of construction is anticipated to be around $9 million. In addition, the City of Riverside has acquired a 5-acre lot located next to Highland Elementary on Galileo Drive for the facility to be built upon. The center will include a multipurpose basketball, pickleball, and volleyball court system, a community room, a free/machine weight area, cardio equipment, an exercise studio, locker rooms, a walking/jogging loop, and space for storage and utilities. A childcare center is also being considered.

Total Amount Requested*

This number should be equal to or less than the 2024 total municipal grant funds received by your city.

$91,533.87

Project Information

Your City Impact*

Explain how these projects will benefit residents of your city.

The Riverside Community Center offers several benefits to the community.

Quality of Life- Fitness & Recreation opportunities, increased community social interactions
Access to Services- Possibilities include a Senior Meals program, Childcare services, and After School Programs
Economic Development- Increased Housing Development around the Center resulting in more students in the school district

Overall, the Riverside Community Center can be a catalyst for growth and improvement for the entire community!

Recognition of WCRF*

Explain how the Riverboat Foundation will be recognized for contributing to these projects. We would like you to share with your community that your projects are funded in part, by WCRF.

Recognition on a donor wall at the finished facility and fundraising events for the project as well as a press release from the City acknowledging the generous contribution.

Discussion with Riverboat Foundation Board*

After the application deadline has passed, we request a city representative attend the Riverboat Foundation board meeting in March to discuss and clarify your municipal grant application. Will you agree to this request?

Yes

Supporting Documents

Additional Documentation Supporting the Application

Please add any additional information you want us to consider. Combine all documents into one file before uploading.

Signatures

Alternate City Contact Name*

Stephanie Thomann

Alternate Contact email*

Please add an alternate contact person in the case that the primary grant contact cannot be reached.

cityclerk@riversideiowa.gov

Alternate phone contact*

Please add an alternate contact phone number in the case that the primary grant contact cannot be reached.

3196483501

Affirmation*

I hereby affirm that this application has been approved by its governing body. All data in this application are correct and true. If awarded funds by the WCRF, the Applicant will comply with WCRF guidelines and grant agreement.

I agree

Digital Signature*

Enter your full, legal name.

Cole Joseph Smith

File Attachment Summary

Applicant File Uploads

No files were uploaded

City of Riverside

2025 Solid Waste & Recycling Collection Proposal Comparison

General Information	**Vendor Name**	Smith Sanitation Services	ABC Disposal	Lakeshore Recyling Systems	N&N Sanitation	
	Location	Tiffin, IA	Cedar Rapids, IA	North Liberty, IA	Kalona, IA	
	Term Length	5 Years	5 Years	5 Years	5 Years	7 Years
	Annual Cost Increases	0%	3%	3%	Up to 5% on Years 3 and 5	Up to 5% on Years 3 and 6
	Pick Up Day	M or F	F	M	M or W	
Solid Waste	**Solid Waste - 35 Gal**	$16.00	$19.50	$18.03	$18.50	$17.00
	Solid Waste - 65 Gal	$18.00	$22.50	$20.09	$21.00	$19.50
	Tag for Additional Bag	$1.00	$2.75	$2.85	$3.00	$3.00
Recycling	**Recycling - 65 Gal**	$4.00	included	Included	Included	Included
	Recycling - 95 Gal	$4.00	included	Included	$1.50	$1.50
Extra Refuse	**City Clean Up**	No Info Provided	2 per year, Pricing TBD	Pricing TBD	$750 per day	$750 per day
	Tags for bulky refuse	$3.50	$3.00	$3.00		
	Christmas Trees	1 tag	$15.00		$15.00	$15.00
	Yard Waste	1 tag - 30 gal	$7	$1.55	$1.75	$1.75
	Stick & Limb	$1.00			Does Not Offer Service	Does Not Offer Service
Processes	**Missed Pick Up**	Same Day, within 24hr of service day	Call Service Number	Call Service Number	Call Service Number, with 24 hours	
	Equipment	2021 F-750 Curbtender 11yd 2024 International Curbtender 11yd 2001 F-250 Perkins Satellite 8yd (Yard Waste) 2013 International New Way 20yd 2013 International Labrie Manual Side Load	2 Dedicated - 1 Garbage and 1 Recycling 2022 Freightliner PAC-Tech 25yd Side Load	Garbage- Currotto Mack Body Recycling- Currotto Mack Body Yard Waste- Mini Packer Rear Load	2009 Peterbilt Split Body Sideload - 5.25 ton trash, 2.25 ton recycle 2004 Sterling Condor Split Body Sideload - 5.5 ton trash, 2 ton recycling 2006 International 7000 Sideload 2009 International 7000 Sideload	
Misc.	**Notes**		No Glass Recycling, City Facilities Free of Charge	Acquired Johnson County Refuse in December of 2021. LRS is the City's current provider of Solid Waste & Recycling Collection services.	Primarily serve small towns and HOAs.	
	Experience	No City Clients, but HOAs with 20-70 units	Hiawatha, Palo, Williamsburg, and Washington	Kalona, Riverside, Lone Tree, Solon, North Liberty	Harper. Keswick, Webster, Delta (Largest City is pop. 264)	
	Transition	Carts delivered 1-2 weeks ahead	Carts deliverd one week in advance	No Transition Needed	Carts delivered 1-2 weeks ahead	
Contract Costs	**Contract Totals**	**$ 545,160.00**	**$ 592,021.73**	**$ 528,609.63**	**$ 541,455.39**	**$ 715,875.62**
	FY2026	$ 109,032.00	$ 111,510.00	$ 99,566.04	$ 104,076.00	$ 96,642.00
	FY2027	$ 109,032.00	$ 114,855.30	$ 102,553.02	$ 104,076.00	$ 96,642.00
	FY2028	$ 109,032.00	$ 118,300.96	$ 105,629.61	$ 109,279.80	$ 101,474.10
	FY2029	$ 109,032.00	$ 121,849.99	$ 108,798.50	$ 109,279.80	$ 101,474.10
	FY2030	$ 109,032.00	$ 125,505.49	$ 112,062.46	$ 114,743.79	$ 106,547.81
	FY2031	N/A	N/A	N/A	N/A	$ 106,547.81
	FY2032	N/A	N/A	N/A	N/A	$ 106,547.81
	Cost Per Year	$ 109,032.00	$ 118,404.35	$ 105,721.93	$ 108,291.08	$ 102,267.95

	Items	**Tags**	**Cost**	**Cost**	**Tags**	**Cost**	**Tags**	**Cost**
Bulky Items	Refridgerator	10	$35.00	$30.00	7	$21.00	8	$24.00
	Freezer			$31.00	7	$21.00	8	$24.00
	Air Conditioner			$32.00	7	$21.00	8	$24.00
	Water Heater			$33.00	7	$21.00	8	$24.00
	Washer	8	$28.00	$34.00	7	$21.00	8	$24.00
	Stove	8	$28.00	$35.00	7	$21.00	8	$24.00
	Microwave	5	$17.50	$36.00	7	$21.00	5	$15.00
	Dryer	8	$28.00	$37.00	7	$21.00	8	$24.00
	Dishwasher			$38.00	7	$21.00	8	$24.00
	TV or Computer	5	$17.50	$15-$60	7	$21.00	5	$15.00
	Couch - Reclining or Hidabed	3	$10.50	$45.00	15	$45.00	15	$45.00
	Couch	3	$10.50	$30.00	10	$30.00	10	$30.00
	Sectional				20	$60.00		
	Chaise Lounge	3	$10.50		15	$45.00		
	Loveseat	3	$10.50	$30.00	6	$18.00	6	$18.00
	Stuffed Chair	2	$7.00	$15.00	5	$15.00	5	$15.00
	Single Recliner	3	$10.50	$30.00	5	$15.00	5	$15.00
	Straight Back Chair	2	$7.00	$15.00	2	$6.00	2	$6.00
	Mattress or Box Springs							
	King	3	$10.50	$30.00	8	$24.00	8	$24.00
	Queen	3	$10.50	$30.00	7	$21.00	7	$21.00
	Full	3	$10.50	$15.00	6	$18.00	6	$18.00
	Twin	3	$10.50	$15.00	4	$12.00	4	$12.00
	Dresser (ex. 6 drawers)	3	$10.50	$30.00	1 per drawer	$18.00	2 + 1 tag for every 2 drawers	$15.00
	Carpet (3x8 pieces)			10 x 12 - $75	3	$9.00	3	$9.00
	Toilet	3	$10.50	$30.00	2	$6.00	2	$6.00
	Lamps	2	$7.00	$15.00	1	$3.00	1	$3.00
	Grill			$30.00	3	$9.00	3	$9.00
	Lawn Mower				7	$21.00		
	Eliptical				10	$30.00		

RESOLUTION #2025-XX

RESOLUTION TO AWARD THE CONTRACT FOR SOLID WASTE & RECYCLING COLLECTION SERVICES

WHEREAS, the Chapter 106 of the Riverside Code of Ordinance establishes the City's responsibility to provide Solid Waste Collection Services via contract.

WHEREAS, the City Of Riverside, Iowa, received proposals for Solid Waste & Recycling Collection Services on February 6th, 2025.

NOW, THEREFORE, BE IT RESOLVED, the City of Riverside City Council, hereby awards a solid waste & recycling collection services contract to _____ with a term of July 1, 2025 to ___ _, ____.

BE IT FURTHER RESOLVED, by the City Council of Riverside, Iowa that the Mayor and City Administrator are hereby authorized and directed to execute said resolution.

It was moved by Councilperson _____, seconded by Councilperson _____ to approve the foregoing resolution.

Roll Call: Rogerson, Kiene, Sexton, Schneider, Mills

Ayes:

Nays:

Absents:

PASSED AND APPROVED by the Riverside City Council on this 18th day of February 2025.

Signed: _____ Date: _____

Allen Schneider, Mayor

Signed: _____ Date: _____

Stephanie Thomann, City Clerk

VEENSTRA & KIMM INC.
2600 University Parkway, Suite 1
Coralville, Iowa 52241

319.466.1000 // 888.241.8001
www.v-k.net

MEMORANDUM

To: City of Riverside

From: Emily Linebaugh

Subject: UV Disinfection System Replacement
January 2025 Progress Report

Date: 02/04/2025

A summary of activities for the project during the period covered by Pay Estimate No. 2 (01/01/2025 to 1/31/2025) are as follows:

1. Shop drawings for the UV Disinfection Equipment were reviewed and equipment is in line for production. Equipment is scheduled to arrive 3/25/2025. This will not allow startup by 3/15/2025; however, startup will be scheduled as soon as possible after equipment installation.

2. V&K will contact IDNR Field Office 6 to update them with regard to UV startup dates.

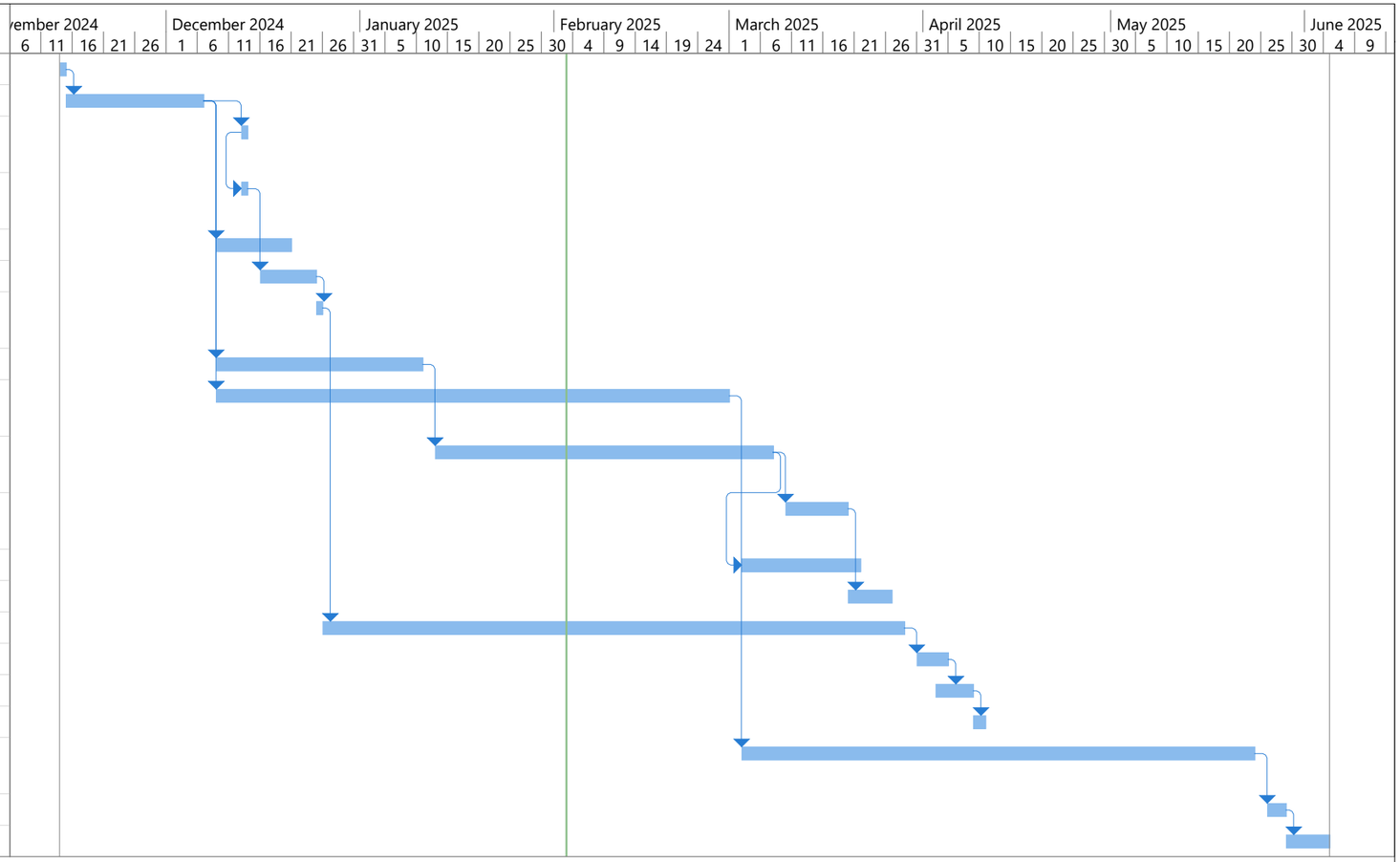
3. Shop drawing review continues on other equipment and materials.

4. WRH submitted an updated project schedule (attached).

5. Pay application includes request for payment of items related to project management and shop drawings.

END

ID	Task Mode	Task Name	Duration	Start	Finish	Predecessors
1		Bid Date	1 day	Thu 11/14/24	Thu 11/14/24	
2		Contracts	16 days	Fri 11/15/24	Fri 12/6/24	1
4		Glasco Submittal received	1 day?	Fri 12/13/24	Fri 12/13/24	2FS+4 days
5		Glasco SUbmitttal sent to the engineer	1 day	Fri 12/13/24	Fri 12/13/24	4SS
3		subcontracts/PO's	10 days	Mon 12/9/24	Fri 12/20/24	2
6		glasco review	7 days	Mon 12/16/2	Tue 12/24/24	5
7		return submittal to glasco	1 day	Wed 12/25/24	Wed 12/25/24	6
9		Other submittals	25 days	Mon 12/9/24	Fri 1/10/25	2
10		Engineered Building Submitalls	60 days	Mon 12/9/24	Fri 2/28/25	2
12		other Material procurement	40 days	Mon 1/13/25	Fri 3/7/25	9
13		Demo existing equipment	8 days	Mon 3/10/25	Wed 3/19/25	12
14		install electrical	15 days	Mon 3/3/25	Fri 3/21/25	12FS-5 days
15		concrete work	5 days	Thu 3/20/25	Wed 3/26/25	13
8		UV Build time	67 days	Thu 12/26/24	Fri 3/28/25	7
17		Install New UV	5 days	Mon 3/31/25	Fri 4/4/25	8
18		Finish electrical	4 days	Thu 4/3/25	Tue 4/8/25	17FS-2 days
19		Start Up UV	2 days	Wed 4/9/25	Thu 4/10/25	18
11		Prengineer Building procurement	60 days	Mon 3/3/25	Fri 5/23/25	10
16		install Building	3 days	Mon 5/26/25	Wed 5/28/25	11
20		punch list/closeout	5 days	Thu 5/29/25	Wed 6/4/25	16



Project: Riverside Schedule 1-31
Date: Mon 2/3/25

Task	Project Summary	Manual Task	Start-only	Deadline
Split	Inactive Task	Duration-only	Finish-only	Progress
Milestone	Inactive Milestone	Manual Summary Rollup	External Tasks	Manual Progress
Summary	Inactive Summary	Manual Summary	External Milestone	

VEENSTRA & KIMM INC.
2600 University Parkway, Suite 1
Coralville, Iowa 52241

319.466.1000 // 888.241.8001
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PAY ESTIMATE NO. 2

February 4, 2025

UV DISINFECTION SYSTEM REPLACEMENT
RIVERSIDE, IOWA

WRH, Inc.
1648 T Avenue
South Amana, IA 52334

Contract Amount $386,600.00
Contract Date November 18, 2024
Pay Period Jan. 1, 2025 - Jan. 31, 2025

BID ITEMS

	Description	Unit	Completed Previously	Completed This Period	Scheduled Value	Percent Completed	Value Completed
1.1	Bonds/Ins/Permits/Builders Risk	LS	$ 13,579.00		$ 13,579.00	100%	$ 13,579.00
1.2	Project Management	LS	$ 2,000.00	$ 1,000.00	$ 10,000.00	30%	$ 3,000.00
1.3	Site Supt/Quality Control/Safety	LS			$ 5,000.00		
1.4	Temp Utlities/Toilets/Misc	LS			$ 1,000.00		
1.5	Erosion Control	LS			$ 1,000.00		
1.6	Mobilization	LS			$ 5,500.00		
1.7	Layout	LS			$ 2,500.00		
1.8	Testing	LS			$ 2,500.00		
1.9	Submittals	LS		$ 4,500.00	$ 7,000.00	64%	$ 4,500.00
2.1	Removals/UV/Concrete	LS			$ 15,000.00		
2.2	Grading for Slabs & Driveway	LS			$ 7,500.00		
2.3	Sidewalk & Driveways; L, M & E	LS			$ 9,000.00		
2.4	Seeding & Restoration	LS			$ 1,500.00		
3.1	Building Piers, Pads: L,M & E	LS			$ 3,500.00		
5.1	Soild Planking L&M	LS			$ 500.00		
7.1	Concrete Joints: L&M	LS			$ 1,000.00		
11.1	Glasco UV Materials	LS			$ 208,350.00		
11.2	UV Installation	LS			$ 15,000.00		
13.1	Shelter Sealed Eng. Dwgs	LS			$ 2,700.00		
13.2	Shelter Building Materials	LS			$ 10,471.00		
13.3	Building Erection L,M & E	LS			$ 12,000.00		
16.1	Electrical Demo	LS			$ 1,439.00		
16.2	Electrical Underground Materials	LS			$ 7,500.00		
16.3	Electrical Underground Labor	LS			$ 8,630.00		
16.4	Electrical Above Ground Materials	LS			$ 3,592.00		
16.5	Electrical Above Ground Labor	LS			$ 4,130.00		
16.6	Electrical Building Materials	LS			$ 4,022.00		
16.7	Electrical Building Labor	LS			$ 5,180.00		
17.1	Switchgear	LS			$ 4,652.00		
17.2	Controls	LS			$ 12,855.00		
				Contract Price:	**$ 386,600.00**		**$ 21,079.00**

MATERIALS STORED SUMMARY				
	Description	**# of Units**	**Unit Price**	**Extended Cost**
			Total	$ -

SUMMARY

		Total Approved	Total Completed
Contract Price		$ 386,600.00	$ 21,079.00
Approved Change Order (list each)			
	Revised Contract Price	$ 386,600.00	$ 21,079.00

Stored	$ -
Total Earned	$ 21,079.00
Retainage (5%)	$ 1,053.95
Total Earned Less Retainage	$ 20,025.05

Total Previously Approved (list each)	Pay Estimate No. 1	$ 14,800.05	

Total Previously Approved	$ 14,800.05
Amount Due This Request	**$ 5,225.00**

Percent Complete 5%

The amount $5,225.00 is recommended for approval for payment in accordance with the terms of the contract.

Prepared By:	**Recommended By:**	**Approved By:**
WRH, Inc.	**Veenstra & Kimm, Inc.**	**Riverside, Iowa**
Signature:	Signature: Emily Linebaugh	Signature:
Name: Bud Maynard	Name: Emily Linebaugh	Name:
Title: VP	Title: Engineer	Title:
Date: 2-04-25	Date: February 4, 2025	Date:

RESOLUTION #2025-XX

PAY REQUEST #2 TO WRH, INC. FOR WORK COMPLETED ON WASTEWATER TREATMENT PLANT UV DISINFECTION SYSTEM REPLACEMENT PROJECT

WHEREAS, the City of Riverside awarded a contract to WRH, Inc. for the replacement of the UV Disinfection System at the Wastewater Treatment Plant in the amount of $386,600.00 at the Riverside City Council Meeting on November 18th, 2024; and

WHEREAS, the City of Riverside has been provided an authorized pay request and recommendation of approval by the contracted engineering firm, Veenstra & Kimm, Inc.

NOW, THEREFORE, BE IT RESOLVED, by the City Council of Riverside, Iowa does hereby accept Pay Request #2 and authorize payment in the amount of $5,225.00 to WRH, Inc. for work completed on the UV Disinfection System Replacement Project at the Wastewater Treatment Plant for the period of 1/1/2025 through 1/31/2025.

BE IT FURTHER RESOLVED, by the City Council of Riverside, Iowa that the Mayor and City Administrator are hereby authorized and directed to execute said resolution.

It was moved by Councilperson _____, seconded by Councilperson _____ to approve the foregoing resolution.

Roll Call: Sexton, Schneider, Kiene, Mills, Rogerson

Ayes:

Nays:

Absents:

PASSED AND APPROVED by the Riverside City Council on this 18th day of February 2025.

Signed: _____ Date: _____

Allen Schneider, Mayor

Attest: _____ Date: _____

Stephanie Thomann, City Clerk

RESOLUTION #2025-XX

RESOLUTION TO APPROVE AGREEMENT FOR BUILDING INSPECTION AND CODE ENFORCEMENT SERVICES

WHEREAS, the City Of Riverside, Iowa, provides building inspection services and requires that Riverside Code of Ordinances must be enforced; and

WHEREAS, the City of Riverside wishes to contract building inspection and code enforcement services.

NOW, THEREFORE, BE IT RESOLVED, the City of Riverside City Council, hereby agrees to enter a services agreement contract for building inspection and code enforcement services with Goerdt Inspections and Consultation Services, LLC.

BE IT FURTHER RESOLVED, by the City Council of Riverside, Iowa that the Mayor and City Administrator are hereby authorized and directed to execute said resolution.

It was moved by Councilperson _____, seconded by Councilperson _____ to approve the foregoing resolution.

Roll Call: Rogerson, Kiene, Sexton, Schneider, Mills

Ayes:

Nays:

Absents:

PASSED AND APPROVED by the Riverside City Council on this 18th day of February 2025.

Signed: _____ Date: _____

Allen Schneider, Mayor

Signed: _____ Date: _____

Stephanie Thomann, City Clerk

CITY of RIVERSIDE FUND BALANCES 01-31-2025

FUND	NAME	BALANCE	RESERVES (3 MONTHS)		AVAILABLE
001	GENERAL	$ 452,007.41	$ (417,000.00)		$ 35,007.41
002	FIRE	$ 270,246.85	$ (270,246.85)		$ -
110	R.USE	$ 168,188.70			$ 168,188.70
121	LOST	$ 91,243.78	$ -		$ 91,243.78
125	TIF	$ 9,505.26	$ (9,505.26)		$ -
145	CASINO	$ 1,790,204.19	$ -		$ 1,790,204.19
301	CAP PRO	$ 566,934.40		$ -	$ 566,934.40
302	CB FUNDS	$ 1,454,933.39	$ (1,454,933.39)		$ -
600	WATER	$ 148,366.12	$ (84,000.00)		$ 64,366.12
610	SEWER	$ 559,750.47	$ (84,000.00)		$ 475,750.47
680	STORM	$ 13,195.01	$ -		$ 13,195.01
	TOTAL	$ 5,524,575.58	$ (2,319,685.50)	$ -	$ 3,204,890.08
POOLED CASH BALANCE		**1/31/2025**			
COMM. BUILDING SET A SIDE			INTEREST RATE		
SAV	XXX28	$ 454,933.39	4.07%		
CD	XXXXX067	$ 1,000,000.00	4.35%		
TOTAL	302 FUND	$ 1,454,933.39			
CHECK	XXX78	$ 511,082.17	2.40%		
MM	XXX45	$ 2,549,054.76	4.07%		
CD	XXXXX066	$ 1,000,000.00	4.35%		
TIF	XXXX326	$ 9,505.26			
	TOTAL	$ 4,069,642.19	TOTAL ALL FUNDS	$ 5,524,575.58	
LESS RESERVES		$ (2,319,685.50)			
LIQUID CASH		$ 1,749,956.69	1/31/2025		

MTD TREASURERS REPORT

AS OF: JANUARY 31ST, 2025

FUND	BEGINNING CASH BALANCE	M-T-D REVENUES	M-T-D EXPENSES	CASH BASIS BALANCE	NET CHANGE OTHER ASSETS	NET CHANGE LIABILITIES	ACCRUAL ENDING CASH BALANCE
001-GENERAL FUND	572,949.48	13,371.69	142,880.73	443,440.44	0.00	(152.71)	443,287.73
002-FIRE DEPARTMENT	268,943.64	11,076.84	9,120.71	270,899.77	0.00	0.00	270,899.77
110-ROAD USE TAX	158,153.17	13,374.34	2,932.47	168,595.04	0.00	0.00	168,595.04
121-LOCAL OPTION SALES TAX	74,230.61	17,233.61	0.00	91,464.22	0.00	0.00	91,464.22
125-TIF	9,505.26	0.00	0.00	9,505.26	0.00	0.00	9,505.26
145-CASINO REVENUE FUND	1,667,570.56	131,440.62	4,479.41	1,794,531.77	0.00	0.00	1,794,531.77
301-CAPITAL PROJECTS	586,157.84	2,752.46	20,606.19	568,304.11	0.00	0.00	568,304.11
302-COMMUNITY CENTER FUNDS	1,462,037.91	1,545.48	8,650.00	1,454,933.39	0.00	0.00	1,454,933.39
600-WATER FUND	150,131.97	27,509.50	28,948.69	148,692.78	0.00	31.79	148,724.57
610-SEWER FUND	583,825.41	28,311.22	51,065.59	561,071.04	0.00	31.79	561,102.83
680-STORM WATER	11,490.93	1,735.96	0.00	13,226.89	0.00	0.00	13,226.89
GRAND TOTAL	5,544,996.78	248,351.72	268,683.79	5,524,664.71	0.00	(89.13)	5,524,575.58

*** END OF REPORT ***

POOLED CASH REPORT (FUND 999)

AS OF: JANUARY 31ST, 2025

FUND ACCOUNT# ACCOUNT NAME	BEGINNING BALANCE	CURRENT ACTIVITY	CURRENT BALANCE
CLAIM ON CASH			
001-1110 CHECKING ACCT-GENERAL FUND	572,949.48	(129,661.75)	443,287.73
002-1110 CHECKING ACCT-FIRE DEP.	268,943.64	1,956.13	270,899.77
110-1110 CHECKING ACCT-ROAD USE TAX	158,153.17	10,441.87	168,595.04
121-1110 CHECKING ACCT-LOST	74,230.61	17,233.61	91,464.22
125-1110 CHECKING ACCT-TIF	9,505.26	0.00	9,505.26
145-1110 CHECKING ACCT-CASINO REVENUE	1,667,570.56	126,961.21	1,794,531.77
301-1110 CHECKING ACCT-CAP PROJECTS	586,157.84	(17,853.73)	568,304.11
302-1110 COMMUNITY CENTER FUNDS	1,462,037.91	(7,104.52)	1,454,933.39
600-1110 CHECKING ACCT-WATER	150,131.97	(1,407.40)	148,724.57
610-1110 CHECKING ACCT-SEWER	583,825.41	(22,722.58)	561,102.83
680-1110 CHECKING ACCT-STORM WATER	11,490.93	1,735.96	13,226.89
TOTAL CLAIM ON CASH	5,544,996.78	(20,421.20)	5,524,575.58
CASH IN BANK - POOLED CASH			
999-1110 CASH IN BANK #35378	533,024.49	(21,942.32)	511,082.17
999-1112 MONEY MARKET #67545	2,531,555.37	17,499.39	2,549,054.76
999-1115 COMM CENTER FUND #67928	470,911.66	(15,978.27)	454,933.39
999-1121 TIF FUND F&M #4604326	9,505.26	0.00	9,505.26
999-1122 CD# 40110066	1,000,000.00	0.00	1,000,000.00
999-1123 CD #40110067 CBF	1,000,000.00	0.00	1,000,000.00
SUBTOTAL CASH IN BANK - POOLED CASH	5,544,996.78	(20,421.20)	5,524,575.58
WAGES PAYABLE			
999-2010 WAGES PAYABLE	0.00	0.00	0.00
SUBTOTAL WAGES PAYABLE	0.00	0.00	0.00
TOTAL CASH IN BANK - POOLED CASH	5,544,996.78	(20,421.20)	5,524,575.58
DUE TO OTHER FUNDS - POOLED CASH			
999-2100 DUE TO OTHER FUNDS	5,544,996.78	(20,421.20)	5,524,575.58
TOTAL DUE TO OTHER FUNDS	5,544,996.78	(20,421.20)	5,524,575.58

POOLED CASH REPORT (FUND 999)

AS OF: JANUARY 31ST, 2025

FUND ACCOUNT# ACCOUNT NAME	BEGINNING BALANCE	CURRENT ACTIVITY	CURRENT BALANCE
DUE TO POOLED CASH			
001-2020 ACCOUNTS PAYABLE	(1,226.76)	1,226.76	0.00
002-2020 ACCOUNTS PAYABLE	0.00	0.00	0.00
110-2020 ACCOUNTS PAYABLE	0.00	0.00	0.00
121-2020 ACCOUNTS PAYABLE	0.00	0.00	0.00
125-2020 ACCOUNTS PAYABLE	0.00	0.00	0.00
145-2020 ACCOUNTS PAYABLE	0.00	0.00	0.00
200-2020 ACCOUNTS PAYABLE	0.00	0.00	0.00
301-2020 ACCOUNTS PAYABLE	0.00	0.00	0.00
302-2020 ACCOUNTS PAYABLE	0.00	0.00	0.00
600-2020 ACCOUNTS PAYABLE	(31.79)	31.79	0.00
610-2020 ACCOUNTS PAYABLE	(31.79)	31.79	0.00
670-2020 ACCOUNTS PAYABLE	0.00	0.00	0.00
680-2020 ACCOUNTS PAYABLE	0.00	0.00	0.00
TOTAL DUE TO POOLED CASH	(1,290.34)	1,290.34	0.00
DUE FROM OTHER FUNDS			
999-1330 DUE FROM OTHER FUNDS	5,699.66	1,290.34	6,990.00
TOTAL DUE FROM OTHER FUNDS	5,699.66	1,290.34	6,990.00
ACCOUNTS PAYABLE - POOLED CASH			
999-2020 ACCOUNTS PAYABLE CONTROL	5,699.66	1,290.34	6,990.00
TOTAL ACCOUNTS PAYABLE POOLED CASH	5,699.66	1,290.34	6,990.00

*** PROOF CASH BALANCES ***

(A)		(B)		(C)	
CLAIM ON CASH	5,524,575.58	CLAIM ON CASH	5,524,575.58	CASH IN BANK	5,524,575.58
CASH IN BANK	5,524,575.58	DUE TO OTHER FUNDS	5,524,575.58	DUE TO OTHER FUNDS	5,524,575.58
DIFFERENCE	0.00		0.00		0.00

*** PROOF ACCOUNTS PAYABLE BALANCES ***

(D)		(E)		(F)	
AP PENDING	6,990.00	AP PENDING	6,990.00	DUE FROM OTHER FUNDS	6,990.00
DUE FROM OTHER FUNDS	6,990.00	ACCOUNTS PAYABLE	0.00	ACCOUNTS PAYABLE	0.00
DIFFERENCE	0.00		6,990.00		(6,990.00)

*** END OF REPORT ***

========== R E P O R T T O T A L S ==========

==== B O O K C O D E T O T A L S ====

BOOK:	--CURRENT--	+1 MONTHS	+2 MONTHS	+3 MONTHS	+4 MONTHS	--BALANCE--
01-BOOK 01	163.40CR	0.00	29.45	66.82	531.20	464.07
02-BOOK 02	226.03	0.00	0.00	0.00	318.68	544.71
03-BOOK 03	1036.68CR	0.00	0.00	0.00	0.00	1036.68CR
04-BOOK 04	123.29CR	13.52	13.40	0.00	0.00	96.37CR
05-BOOK 05	50.78CR	0.00	0.00	0.00	0.00	50.78CR
06-BOOK 06	0.00	0.00	0.00	0.00	0.00	0.00
07-BOOK 07	65.92CR	0.00	87.18	0.00	346.25	367.51
08-BOOK 08	379.99CR	0.00	0.00	0.00	819.69	439.70
TOTALS	1594.03CR	13.52	130.03	66.82	2015.82	632.16

ERRORS: 000

DATES: 1/01/2025 THRU 1/31/2025

	NUMBER#	TOTAL ARREARS	TOTAL CURRENT	TOTAL BALANCE	ACTIVE ACCOUNT RECONCILIATION	
ACTIVE ACCOUNTS:	556	1,540.19CR	59,228.48	57,688.29	NEW ACCOUNTS:	4
DISCONNECTED ACCTS:	2	0.00	78.76	78.76	DISCONNECT--NO TRF:	2
FINALED ACCOUNTS:	36	2,172.35		2,172.35	DISCONNECT-TRANSFER:	0
INACTIVE ACCOUNTS:	1,906	0.00		0.00		
GRAND TOTALS	2,500	632.16	59,307.24	59,939.40		

CALCULATION SUMMARY	TOTAL CHARGES:	59,307.24
	DEPOSIT RETURNS:	0.00
	TOTAL CURRENT:	59,307.24

====== S E R V I C E C A T E G O R Y T O T A L S ======

CATEGORY	NUMBER	TOTAL NET	FUEL-ADJ	TOTAL TAX	TAXABLE	BILLED CONSUMPTION	UNBILLED CONSUMPTION	TOTAL CONSUMPTION
AS ANIMAL SHELT	36	78.00	0.00	0.00	0.00			
GAR GARBAGE	777	7,407.50	0.00	0.00	0.00			
STW STORM WATER	541	1,623.00	0.00	0.00	0.00			
SWR SEWER	535	24,200.11	0.00	702.11	10,030.17	2604,556.0000		2604,556.0000
WTR WATER	545	23,936.52	0.00	1,360.00	22,664.45	2637,603.0000		2637,603.0000
TOTALS		57,245.13	0.00	2,062.11	32,694.62			

========== R E V E N U E C O D E T O T A L S ==========

	R/C DESCRIPTION	G/L ACCOUNT#	AMOUNT
SERVICES:			
	100-WATER	600-4-810-1-4500	23,936.52
	200-SEWER	610-4-815-1-4500	24,200.11
	300-GARBAGE	001-4-950-1-4504	7,407.50
	400-ANIMAL SHELTER DONATION	001-4-950-2-4700	78.00
	450-STORM WATER FEE	680-4-950-4-4504	1,623.00
TAX:			
	190-WATER EXCISE TAX	600-4-810-1-4560	1,360.00
	290-SEWER TAX	610-4-815-4-4560	702.11
	R/C TOTALS		59,307.24

========== R A T E T A B L E T O T A L S ==========

CAT	CODE	TBL	DESCRIPTION	SCHED	NO#	TOTAL NET	FUEL-ADJ	TOTAL TAX	TAXABLE	CONSUMPTION	MLT.
AS	400	A10	ANIMAL SHELTER	A10	3	30.00	0.00	0.00	0.00		
AS	400	AS1	ANIMAL SHELTER	AS1	28	28.00	0.00	0.00	0.00		
AS	400	AS2	ANIMAL SHELTER	AS2	1	2.00	0.00	0.00	0.00		
AS	400	AS3	ANIMAL SHELTER	AS3	1	3.00	0.00	0.00	0.00		
AS	400	AS5	ANIMAL SHELTER	AS5	3	15.00	0.00	0.00	0.00		
GAR	300	G02	GARBAGE- 35 GAL	G02	98	1,715.00	0.00	0.00	0.00		

BOOK:

========== R A T E T A B L E T O T A L S ==========

** (CONTINUED) **

CAT	CODE	TBL	DESCRIPTION	SCHED	NO#	TOTAL NET	FUEL-ADJ	TOTAL TAX	TAXABLE	CONSUMPTION	MLT.
GAR	300	G03	GARBAGE - 65 GAL	G03	289	5,635.50	0.00	0.00	0.00		
GAR	300	G04	GARBAGE - XTRA CART	G04	4	57.00	0.00	0.00	0.00		
GAR	300	R01	RECYCLING 65 GAL	R01	336	0.00	0.00	0.00	0.00		
GAR	300	R02	RECYCLING 95 GAL	R02	50	0.00	0.00	0.00	0.00		
STW	450	ST1	STORM WATER FEE	ST1	541	1,623.00	0.00	0.00	0.00		
SWR	200	S01	SEWER-RESIDENTIAL	S01	480	13,764.46	0.00	0.00	0.00	1,334,069.0000	
SWR	200	S03	SEWER-COM, IND, GOV	S03	46	10,021.90	0.00	687.75	9,825.06	1,263,403.0000	
SWR	200	S04	SEWER-RES SEWER ONLY	S04	4	140.00	0.00	0.00	0.00		
SWR	200	S06	SEWER - 150% RATE	S06	1	68.64	0.00	0.00	0.00	5,627.0000	
SWR	200	S07	SEWER -COM O/S CITY	S07	3	180.00	0.00	12.60	180.00		
SWR	200	S08	SEWER-COM, O/S METER	S08	1	25.11	0.00	1.76	25.11	1,457.0000	
WTR	100	W01	WATER	W01	526	22,669.02	0.00	1,348.46	22,472.18	2,438,161.0000	
WTR	100	W02	WATER - OUTSIDE CITY	W02	2	120.27	0.00	7.22	120.27	9,364.0000	
WTR	100	W03	WATER - 2ND METER	W03	6	72.00	0.00	4.32	72.00		
WTR	100	W05	NO CHARGE	W05	6	0.00	0.00	0.00	0.00	41,786.0000	
WTR	100	WLO	WATER - ACC CONS LOW	WLO	3	0.00	0.00	0.00	0.00		
WTR	100	WO4	WATER NO TAX	WO4	2	1,075.23	0.00	0.00	0.00	148,292.0000	
			TOTALS			57,245.13	0.00	2,062.11	32,694.62		

========== M E T E R G R O U P T O T A L S ==========

CODE	DESCRIPTION	BILLED CONSUMPTION	UNBILLED CONSUMPTION	TOTAL CONSUMPTION	DEMAND CONSUMPTION
W	WATER	2,637,603.0000	0.000	2,637,603.0000	

====== R E F U N D E D D E P O S I T T O T A L S ====

CODE	DESCRIPTION	NUMBER	AMOUNT
	DEPOSIT TOTALS	0	0.00

DATES: 1/01/2025 THRU 1/31/2025

BOOK:

========== CUSTOMER CLASS TOTALS ==========

CLASS CAT	SERV CODE	RATE TABLE	DESCRIPTION	NUMBER	TOTAL NET	FUEL-ADJ	TAXABLE	TOTAL TAX	CONSUMPTION
CIT	WTR	100 W05	NO CHARGE	4	0.00	0.00	0.00	0.00	25,847.0000
			** CLASS TOTAL ** CIT		0.00	0.00	0.00	0.00	25,847.0000
COM	AS	400 AS1	ANIMAL SHELTER	1	1.00	0.00	0.00	0.00	
COM	GAR	300 G02	GARBAGE- 35 GAL	2	35.00	0.00	0.00	0.00	
COM	GAR	300 G03	GARBAGE - 65 GAL	4	78.00	0.00	0.00	0.00	
COM	GAR	300 R01	RECYCLING 65 GAL	6	0.00	0.00	0.00	0.00	
COM	GAR	300 R02	RECYCLING 95 GAL	1	0.00	0.00	0.00	0.00	
			** CATEGORY TOTAL ** GAR		113.00	0.00	0.00	0.00	
COM	STW	450 ST1	STORM WATER FEE	49	147.00	0.00	0.00	0.00	
COM	SWR	200 S01	SEWER-RESIDENTIAL	5	392.09	0.00	0.00	0.00	55,349.0000
COM	SWR	200 S03	SEWER-COM, IND, GOV	42	9,810.89	0.00	9,810.89	686.76	1,236,235.0000
COM	SWR	200 S07	SEWER -COM O/S CITY	3	180.00	0.00	180.00	12.60	
COM	SWR	200 S08	SEWER-COM, O/S METER	1	25.11	0.00	25.11	1.76	1,457.0000
			** CATEGORY TOTAL ** SWR		10,408.09	0.00	10,016.00	701.12	1,293,041.0000
COM	WTR	100 W01	WATER	46	9,052.86	0.00	9,052.86	543.20	1,128,810.0000
COM	WTR	100 W02	WATER - OUTSIDE CITY	1	51.63	0.00	51.63	3.10	3,737.0000
COM	WTR	100 W05	NO CHARGE	2	0.00	0.00	0.00	0.00	15,939.0000
COM	WTR	100 WLO	WATER - ACC CONS LOW	2	0.00	0.00	0.00	0.00	
COM	WTR	100 WO4	WATER NO TAX	2	1,075.23	0.00	0.00	0.00	148,292.0000
			** CATEGORY TOTAL ** WTR		10,179.72	0.00	9,104.49	546.30	1,296,778.0000
			** CLASS TOTAL ** COM		20,848.81	0.00	19,120.49	1,247.42	
GOV	STW	450 ST1	STORM WATER FEE	2	6.00	0.00	0.00	0.00	
GOV	SWR	200 S03	SEWER-COM, IND, GOV	2	151.45	0.00	0.00	0.00	21,242.0000
GOV	WTR	100 W01	WATER	2	151.45	0.00	0.00	0.00	21,242.0000
GOV	WTR	100 WLO	WATER - ACC CONS LOW	1	0.00	0.00	0.00	0.00	
			** CATEGORY TOTAL ** WTR		151.45	0.00	0.00	0.00	21,242.0000
			** CLASS TOTAL ** GOV		308.90	0.00	0.00	0.00	
NTX	STW	450 ST1	STORM WATER FEE	1	3.00	0.00	0.00	0.00	
NTX	SWR	200 S03	SEWER-COM, IND, GOV	1	45.39	0.00	0.00	0.00	5,565.0000
NTX	WTR	100 W01	WATER	1	45.39	0.00	0.00	0.00	5,565.0000
			** CLASS TOTAL ** NTX		93.78	0.00	0.00	0.00	

DATES: 1/01/2025 THRU 1/31/2025

BOOK:

========== CUSTOMER CLASS TOTALS ==========

CLASS CAT	SERV CODE	RATE TABLE	DESCRIPTION	NUMBER	TOTAL NET	FUEL-ADJ	TAXABLE	TOTAL TAX	CONSUMPTION
RES AS	400	A10	ANIMAL SHELTER	3	30.00	0.00	0.00	0.00	
RES AS	400	AS1	ANIMAL SHELTER	27	27.00	0.00	0.00	0.00	
RES AS	400	AS2	ANIMAL SHELTER	1	2.00	0.00	0.00	0.00	
RES AS	400	AS3	ANIMAL SHELTER	1	3.00	0.00	0.00	0.00	
RES AS	400	AS5	ANIMAL SHELTER	3	15.00	0.00	0.00	0.00	
			** CATEGORY TOTAL **	AS	77.00	0.00	0.00	0.00	
RES GAR	300	G02	GARBAGE- 35 GAL	96	1,680.00	0.00	0.00	0.00	
RES GAR	300	G03	GARBAGE - 65 GAL	285	5,557.50	0.00	0.00	0.00	
RES GAR	300	G04	GARBAGE - XTRA CART	4	57.00	0.00	0.00	0.00	
RES GAR	300	R01	RECYCLING 65 GAL	330	0.00	0.00	0.00	0.00	
RES GAR	300	R02	RECYCLING 95 GAL	49	0.00	0.00	0.00	0.00	
			** CATEGORY TOTAL **	GAR	7,294.50	0.00	0.00	0.00	
RES STW	450	ST1	STORM WATER FEE	489	1,467.00	0.00	0.00	0.00	
RES SWR	200	S01	SEWER-RESIDENTIAL	475	13,372.37	0.00	0.00	0.00	1,278,720.0000
RES SWR	200	S03	SEWER-COM, IND, GOV	1	14.17	0.00	14.17	0.99	361.0000
RES SWR	200	S04	SEWER-RES SEWER ONLY	4	140.00	0.00	0.00	0.00	
RES SWR	200	S06	SEWER - 150% RATE	1	68.64	0.00	0.00	0.00	5,627.0000
			** CATEGORY TOTAL **	SWR	13,595.18	0.00	14.17	0.99	1,284,708.0000
RES WTR	100	W01	WATER	477	13,419.32	0.00	13,419.32	805.26	1,282,544.0000
RES WTR	100	W02	WATER - OUTSIDE CITY	1	68.64	0.00	68.64	4.12	5,627.0000
RES WTR	100	W03	WATER - 2ND METER	6	72.00	0.00	72.00	4.32	
			** CATEGORY TOTAL **	WTR	13,559.96	0.00	13,559.96	813.70	1,288,171.0000
			** CLASS TOTAL **	RES	35,993.64	0.00	13,574.13	814.69	
			** GRAND TOTALS **		57,245.13	0.00	32,694.62	2,062.11	

REVENUE AND EXPENDITURES REPORT (UNAUDITED)

AS OF: JANUARY 31ST, 2025

001-GENERAL FUND

% OF YEAR COMPLETED: 58.33

	PRIOR YEAR BUDGET	PRIOR YEAR Y-T-D	CURRENT BUDGET	CURRENT PERIOD	CURRENT YTD ACTUAL	BUDGET BALANCE	% OF BUDGET
001-GENERAL FUND							
TOTAL REVENUE	1,162,476.00	786,376.93	(1,236,022.00)	13,371.69	785,607.63	(2,021,629.63)	63.56-
TOTAL EXPENDITURES	1,888,187.00	883,967.91	1,312,181.00	142,880.73	748,193.27	563,987.73	57.02
REVENUES OVER/(UNDER) EXPENDITURES	(725,711.00)	(97,590.98)	(2,548,203.00)	(129,509.04)	37,414.36	(2,585,617.36)	1.47-
002-FIRE DEPARTMENT							
TOTAL REVENUE	187,230.00	152,812.79	(202,976.00)	11,076.84	170,026.16	(373,002.16)	83.77-
TOTAL EXPENDITURES	180,951.00	58,639.87	198,108.00	9,120.71	91,173.93	106,934.07	46.02
REVENUES OVER/(UNDER) EXPENDITURES	6,279.00	94,172.92	(401,084.00)	1,956.13	78,852.23	(479,936.23)	19.66-
110-ROAD USE TAX							
TOTAL REVENUE	136,210.00	89,070.47	(136,500.00)	13,374.34	92,181.13	(228,681.13)	67.53-
TOTAL EXPENDITURES	81,500.00	16,450.30	162,800.00	2,932.47	29,901.84	132,898.16	18.37
REVENUES OVER/(UNDER) EXPENDITURES	54,710.00	72,620.17	(299,300.00)	10,441.87	62,279.29	(361,579.29)	20.81-
121-LOCAL OPTION SALES TAX							
TOTAL REVENUE	140,000.00	102,375.08	(147,000.00)	17,233.61	99,846.46	(246,846.46)	67.92-
TOTAL EXPENDITURES	140,000.00	56,000.00	140,000.00	0.00	56,000.00	84,000.00	40.00
REVENUES OVER/(UNDER) EXPENDITURES	0.00	46,375.08	(287,000.00)	17,233.61	43,846.46	(330,846.46)	15.28-
125-TIF							
TOTAL REVENUE	0.00	0.00	(5,575.00)	0.00	9,505.26	(15,080.26)	170.50-
TOTAL EXPENDITURES	0.00	0.00	0.00	0.00	0.00	0.00	0.00
REVENUES OVER/(UNDER) EXPENDITURES	0.00	0.00	(5,575.00)	0.00	9,505.26	(15,080.26)	170.50-
145-CASINO REVENUE FUND							
TOTAL REVENUE	1,700,000.00	1,219,164.08	(1,200,000.00)	131,440.62	1,298,154.84	(2,498,154.84)	108.18-
TOTAL EXPENDITURES	2,388,375.00	954,993.35	1,810,683.00	4,479.41	366,121.59	1,444,561.41	20.22
REVENUES OVER/(UNDER) EXPENDITURES	(688,375.00)	264,170.73	(3,010,683.00)	126,961.21	932,033.25	(3,942,716.25)	30.96-
200-DEBT SERVICE							
TOTAL REVENUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL EXPENDITURES	0.00	0.00	0.00	0.00	0.00	0.00	0.00
REVENUES OVER/(UNDER) EXPENDITURES	0.00	0.00	0.00	0.00	0.00	0.00	0.00
301-CAPITAL PROJECTS							
TOTAL REVENUE	1,862,000.00	856,914.70	0.00	2,752.46	24,009.83	(24,009.83)	0.00
TOTAL EXPENDITURES	1,530,000.00	1,138,620.62	1,383,000.00	20,606.19	166,249.23	1,216,750.77	12.02
REVENUES OVER/(UNDER) EXPENDITURES	332,000.00	(281,705.92)	(1,383,000.00)	(17,853.73)	(142,239.40)	(1,240,760.60)	10.28
302-COMMUNITY CENTER FUNDS							
TOTAL REVENUE	132,800.00	116,654.63	(65,000.00)	1,545.48	125,925.53	(190,925.53)	193.73-
TOTAL EXPENDITURES	0.00	0.00	0.00	8,650.00	40,718.75	(40,718.75)	0.00
REVENUES OVER/(UNDER) EXPENDITURES	132,800.00	116,654.63	(65,000.00)	(7,104.52)	85,206.78	(150,206.78)	131.09-

REVENUE AND EXPENDITURES REPORT (UNAUDITED)

AS OF: JANUARY 31ST, 2025

001-GENERAL FUND

% OF YEAR COMPLETED: 58.33

	PRIOR YEAR BUDGET	PRIOR YEAR Y-T-D	CURRENT BUDGET	CURRENT PERIOD	CURRENT YTD ACTUAL	BUDGET BALANCE	% OF BUDGET
600-WATER FUND							
TOTAL REVENUE	403,423.00	236,951.72	(404,000.00)	27,509.50	234,720.54	(638,720.54)	58.10-
TOTAL EXPENDITURES	460,681.00	286,414.60	420,674.00	28,948.69	175,126.99	245,547.01	41.63
REVENUES OVER/(UNDER) EXPENDITURES	(57,258.00)	(49,462.88)	(824,674.00)	(1,439.19)	59,593.55	(884,267.55)	7.23-
610-SEWER FUND							
TOTAL REVENUE	451,830.00	257,354.54	(436,300.00)	28,311.22	281,254.44	(717,554.44)	64.46-
TOTAL EXPENDITURES	415,044.00	238,547.53	414,009.00	51,065.59	197,522.17	216,486.83	47.71
REVENUES OVER/(UNDER) EXPENDITURES	36,786.00	18,807.01	(850,309.00)	(22,754.37)	83,732.27	(934,041.27)	9.85-
680-STORM WATER							
TOTAL REVENUE	19,000.00	11,301.34	(19,000.00)	1,735.96	11,719.28	(30,719.28)	61.68-
TOTAL EXPENDITURES	25,000.00	0.00	19,000.00	0.00	120.00	18,880.00	0.63
REVENUES OVER/(UNDER) EXPENDITURES	(6,000.00)	11,301.34	(38,000.00)	1,735.96	11,599.28	(49,599.28)	30.52-
GRAND TOTAL REVENUES	6,194,969.00	3,828,976.28	(3,852,373.00)	248,351.72	3,132,951.10	(6,985,324.10)	81.33-
GRAND TOTAL EXPENDITURES	7,109,738.00	3,633,634.18	5,860,455.00	268,683.79	1,871,127.77	3,989,327.23	31.93
REVENUES OVER/(UNDER) EXPENDITURES	(914,769.00)	195,342.10	(9,712,828.00)	(20,332.07)	1,261,823.33	(10,974,651.33)	31.93

*** END OF REPORT ***