

**E.M. JOHNSON AND D.E. BENTON VIDEO SURVEILLANCE UPGRADE**

**CITY OF RALEIGH  
RALEIGH, NORTH CAROLINA**

**SUBJECT: ADDENDUM NO. 5**

**FEBURARY 22, 2023**

To the Plans and Specifications for:  
E.M. Johnson and D.E. Benton Video Surveillance Upgrade  
Raleigh, N.C.

**To: PROSPECTIVE BIDDERS AND OTHER CONCERNED PARTIES**

This ADDENDUM forms a part of the Contract Documents and modifies the original Bidding Documents as noted below. Bidders shall acknowledge receipt of the ADDENDUM in the space provided on the Bid Form. Failure to do so may subject the Bidder to Disqualification.

This Addendum consists of 19 pages.

**A. GENERAL CLARIFICATIONS TO BID DOCUMENTS**

1. The Pre-Bid Meeting Minutes (dated February 17, 2023) and Pre-Bid Meeting Sign-In Sheet are attached as **Attachment A** and made part of the Contract Documents.
2. Bidders may schedule an additional site visit to the D.E. Benton site or the E.M. Johnson site if Raleigh staff has availability.

Interested bidders must contact Robert Bonham at [Robert.Bonham@raleighnc.gov](mailto:Robert.Bonham@raleighnc.gov) as soon as possible, with the email subject, "**SURVEILLANCE UPGRADE: Additional site visit request**".

3. Conduit and cable trays are acceptable, but use of J-hooks is not allowed for this project.
4. EMT is the specified conduit for above ceiling cables, and RMC is the specified conduit if the cable may be subject to damage. Some exceptions apply. Estimated lengths and materials are shown in the Conduit Schedule shown in the Drawings, found in Addendum #2.
5. Bidder RFI Submission & Response
  - a. Section 26 05 19 Low-Voltage Power and Control Conductors specifies Belden Product Series: 7953A. Is the proposed alternate from Belden Product Series: 10GX63F acceptable?

**Engineer Response:** The proposed alternate is deemed acceptable for the requirements of the scope of work. No additional alternates shall be permitted without written approval.

**B. CHANGES TO THE SPECIFICATIONS**

1. N/A

C. CHANGES TO THE DRAWINGS

1. Additional and revised Drawings have been included as **Attachment B**. These Drawings include the following sheets:
  - a. V10.4 E.M. Johnson WTP: Conduit Schedule 1 of 3
  - b. V10.5 E.M. Johnson WTP: Conduit Schedule 2 of 3
  - c. Y11.1 E.M. Johnson WTP: Pre-Chem Building
  - d. Y12.0 E.M. Johnson WTP: Sodium Hypochlorite Facility
  - e. Y12.3 E.M. Johnson WTP: Bulk Chemical Building
  - f. Y12.6 E.M. Johnson WTP: Thickened Sludge Pump Station

FOR THE OWNER



BY Nisha Thuruthy  
Nisha Thuruthy, PE

**CITY OF RALEIGH**  
**E.M. JOHNSON & D.E. BENTON VIDEO SURVEILLANCE UPGRADE**  
**M&C PROJECT NO. 00592-0075**  
**February 17, 2023 at 10:00 AM**

**PRE-BID MEETING AGENDA**

**1. Project Bid Date:**

- a. Sealed bids will be received by City of Raleigh at the D.E. Benton Water Treatment Plant, located at **2315 Benson Road, Raleigh, NC 27529** until **1:00 PM** local time, on **Thursday, March 9, 2023**, for the construction of the E.M. Johnson and D.E. Benton Video Surveillance Upgrade project.
- b. After Bids are opened, the Owner shall evaluate them in accordance with the methods and criteria set forth in the Bid Proposal Form. The Bidder is responsible to ensure their bids are received by the City prior to the deadline. The clock in the room where bids are received will be used to document the official time of bid submission. The City accepts no responsibility for mailed bids that are received late.
- c. The Bid opening will be public.

**2. Bid Structure:**

- a. The project is a Lump Sum Bid based on the quantities and items in the Bid Form.

**3. Project Description:**

- a. The work will generally consist of the following:
  - i. Provide new video surveillance camera equipment at both City of Raleigh Water Treatment Plants
  - ii. Demolition and removal of existing cameras
  - iii. Electrical raceway and CAT6 network cable installation termination for new and relocated cameras
  - iv. Provide camera installation, configuration, and positioning for the given field of view
  - v. Provide software configuration for video storage and memory allocation in coordination with City IT

**4. Funding and MBE/WBE/DBE Requirements:**

- a. See MWBE Checklist, Section 00440
- b. The City of Raleigh has a 15% MWBE aspirational goal.
- c. ~~Alicia Puckett~~ Pam Adderley is available for questions, at [MWBE@raleighnc.gov](mailto:MWBE@raleighnc.gov), and (919) 996-5716.

*d. See MWBE Explanation of Affidavit A and Submission Requirements attached.*

**5. Qualification of Bidders:**

- a. Bidders must meet qualifications listed in Article 3 of the project manual.
- b. Bidders must be licensed in the State of North Carolina and be qualified for utility construction.
- c. Contractors performing electrical work must hold an North Carolina electrical contractors unlimited (U) license.
- d. Obtain payment and performance bonds as specified.
- e. Owner may conduct such investigations as Owner deems necessary to establish the responsibility, qualifications, and financial ability of Bidders and any proposed Subcontractors or Suppliers.

**6. Examination of Contract Documents and Site:**

- a. Before submitting his Bid, each Bidder must:
  - i. Examine the Contract Documents thoroughly,
  - ii. Visit the site to become familiar with local conditions that may in any manner affect cost, progress or performance of the work,
  - iii. Become familiar with federal, state, and local laws, ordinances, rules and regulations affecting performance of the work,
  - iv. Study and carefully correlate Bidder's observations with the requirements of the Contract Documents.
- b. Bidder is responsible to review ALL issued documents but please pay particular attention to Addendum #2.
- c. Bidder shall provide written notice to Engineer of all conflicts, errors, or discrepancies in the Contract Documents prior to bid opening in time for Engineer to respond by Addendum. Questions received less than seven (7) days prior to the date for opening of Bids may not be answered.

**7. Construction Contract Periods and Schedules:**

- a. Substantial completion within five hundred sixty (560) calendar days from NTP.
- b. Final completion within five hundred ninety (590) calendar days from NTP.
- c. See Article 4.02 of the Agreement on page 00520-4.

**8. Liquidated Damages:**

- a. Substantial completion of all work not attained – total liquidated damages of \$500/Day
- b. Final completion of all work not attained – total liquidated damages of \$500/Day



- c. Liquidated damages for failing to attain Substantial Completion and Final Completion are not additive and will not be imposed concurrently.

**9. Bid Package Requirements:**

- a. Bids shall be submitted at the time and place indicated in the Advertisement for Bid and shall be included in a plainly marked package with the Project title and name and address of the Bidder, Contractor's license number, and accompanied by the Bid security and other required documents.
- b. No Bid will be considered unless filed on or before the time and at the place designated in the Advertisement to Bid.
- c. Bids received after the time set in the Advertisement for Bid will be returned unopened.
- d. The sealed Bid, marked as indicated above, should be enclosed in an additional (outer) sealed envelope similarly marked and addressed as follows:  
BID ENCLOSED  
Dennis Lassiter  
City of Raleigh, Water Department  
2315 Benson Road  
Raleigh, NC 27529
- e. Mark outer envelope with the Project title and Contractor's license number in the lower left-hand corner.
- f. See Bidder's Checklist, Section 00409-1

**10. Method of Payment:**

- a. See Section 01 22 00 Unit Prices.
- b. Any updates or revisions shall be made via addenda.

**11. Miscellaneous Items:**

- a. Project Schedule
  - i. Contractor is required to submit a Preliminary schedule for Engineer review and Owner approval within 10 days of effective date of contract
  - ii. Sequencing required/allowed for removing surveillance assets from service during construction
- b. Preconstruction Meetings and Daily Staff Updates
  - i. Contractor shall take part in weekly progress meetings to review completed work and discuss upcoming work with project stakeholders
  - ii. Provide daily notifications to operations staff as to the location they will be working

- iii. All work scheduled to take place at facility entrance gates shall take place at low-traffic times and noted in the installation schedule submittal

c. Electrical

- i. Conduit schedule provided for reference only. Provide conduit type and material to meet NEC and AHJ requirements. Route new conduit in similar fashion as existing.
- ii. Anything to be demolished should be removed cleanly and be returned to the Owner.
- iii. New cabling may use existing conduit if available.
- iv. A cable tray is acceptable rather than conduit, if desired.

d. Video

- i. Cameras listed are to be used and standardized at both locations
- ii. Mounting hardware and orientation subject to change upon Owner approval and best practice
- iii. Switches and servers provided by the City of Raleigh. Provide support for configuration and setup as needed.
- iv. Alternate cameras to Axis are not preferred but are allowed if the lead time for Axis cameras is greater than 180 days. Alternates must be approved by the Owner or Engineer prior to ordering. Proof of lead time greater than 180 days is required to approve alternate cameras.
- v. Some existing cameras are analog, while other existing cameras are IP. In locations where existing cameras are analog, the coaxial cable should be removed and replaced with CAT6. In areas where the CAT6 cannot be pulled back into the conduit because it must be routed to a network rack elsewhere, existing conduit that is no longer in use can be removed and disposed of.
- vi. Existing CAT6 may be used if it is in good condition.

e. Miscellaneous

- i. Wireless transponders needed must use the City standard. Model number will be provided.
- ii. The City is ordering switches and servers. This will need to be coordinated with the City.
- iii. The Raleigh Water Treatment Plants are currently using exaqVision but are moving to Milestone.
- iv. If confined space entry is required, confined space entry standards must be complied with, but a 3<sup>rd</sup> party safety contractor will not be required.

**12. Record Drawing Information:**

- a. It is the Contractor's responsibility to prepare accurate record drawing information per the requirements of the specifications (red-lined drawings).

**13. Supplementary/General Conditions:**

- a. Bidders shall read and comply with the General Conditions and Supplementary General Conditions as included in the Contract documents.

**14. Safety:**

- a. While bids are being prepared, it must be noted that safety is of the utmost importance to City of Raleigh. Site safety for the general public, construction workers, City of Raleigh staff, and other representatives of various authorities having jurisdiction, is critical to the success of this project.
- b. The Contractor shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the work. The Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection.
- c. The E.M. Johnson Plant is currently under heavy construction, with three (3) major projects ongoing. There will be no down-time for construction at the plant during the video surveillance upgrade project.

**15. Addenda:**

- a. Fifth (5<sup>th</sup>) addendum will include Pre-Bid meeting notes and approval of a request for an alternate to Belden 7953A conductor cable.
- b. All questions from prospective bidders must be received by **Thursday, March 2, 2023** or seven (7) days prior to the Bid Opening date, to ensure that the questions get answered prior to the Bid Opening date (see Article 7 – Interpretations and Addenda from the Instruction to Bidders section of the Contract Documents).
- c. Questions should be submitted in writing to [nthuruthy@mckimcreed.com](mailto:nthuruthy@mckimcreed.com).

**16. Questions/Comments**

- a. *Background checks will be required. See Appendix A of Contract Documents: SOP for Water Treatment Division Sites Access and Visitor Surety Process – Raleigh Water – Category: Site Safety and Site Security.*
- b. *If a contractor and a subcontractor bid together, it does not matter which contractor is prime and which is the subcontractor. The only requirement is that the contractor doing the electrical work be licensed as described above and in the contract documents.*
- c. *The City of Raleigh is switching to the Milestone Professional VMS.*

SIGN-IN SHEET



RALEIGH WATER  
 E.M. JOHNSON & D.E. BENTON VIDEO SURVEILLANCE UPGRADE  
 PRE-BID MEETING  
 February 17, 2023

Name	Organization	Phone Number	Email
Nisha Thuruthy, PE	McKim & Creed, Inc.	(919) 233-8091	NThuruthy@mckimcreed.com
Joe Lawdanski, PE	McKim & Creed, Inc.	(919) 233-8091	JLawdanski@mckimcreed.com
Dennis Lassiter, PE	Raleigh Water	(919) 996-3477	Dennis.Lassiter@raleighnc.gov
Tim Richards	Raleigh Water	919-524-2756	Timothy.Richards@raleighnc.gov
Gordon Naess	Brady Security	919 270 6376	gordon.naess@brady-services.com
Vernon Selmons	Aspire Electric	336 558-8370	Vernon@weaspireus.com
Bruce Bennett	Johnson Controls	336-669-1343	bruce.bennett@jct.com
BRAD SUDENAIL	CVSI	919- <del>888</del> 4960	brad@carolinavidesecurity.com
CHRIS BOYLE	BITTING ELECTRIC	919-369-9838	boyle@bittingelectric.com
PAM ADDERLEY	COR-MWRB	919-996-5714	mwrbe@raleighnc.gov
David A. Goodson	American Electric Co.	980-430-7019	davidagoodson@americanelectric.com
Johnny Mason	TICH2SV,LLD	803-543-6134	jmason@tich2svllc.com
Tammy Emms	Tammy Emms@Raleighnc.gov	919-524-9351	

SIGN-IN SHEET

Francisco Torres "Paco" Raleigh Water (919) 618-8880 francisco.torres-garcia@raleighnc.gov





## Minority and Women-Owned Business Enterprise Program (MWBE) Forms

BID FORMS	
DOCUMENT	SUBMISSION REQUIREMENTS
<i>For construction and repair projects that are less than \$300,000 provide the following:</i>	
<ul style="list-style-type: none"> <li>Acknowledgment of City MWBE Policy</li> <li>Identification for MWBE Participation for Informal Project Bids Form</li> </ul>	Due with Bid
<i>For construction and repair projects of \$300,000 or more or for projects that are \$100,000 or more that include any State funding provide the following:</i>	
Acknowledgment of City MWBE Policy	Due with Bid
<b>Identification of MWBE Participation</b> <ul style="list-style-type: none"> <li>List all MWBE firms intended to be used</li> </ul>	Due with Bid Complete Applicable Form: Formal, Informal, Professional
<b>Affidavit A</b> <i>Listing of Good Faith Efforts (GFE)</i> <ul style="list-style-type: none"> <li>Earn at least 50 points</li> </ul>	Due with Bid (If self-performing, submit Affidavit B instead)
<b>Affidavit B</b> <i>Intent to Perform Contract with Own Workforce</i> <ul style="list-style-type: none"> <li>Use <b>only</b> if you are self-performing <b>100%</b></li> </ul>	Due with Bid <ul style="list-style-type: none"> <li>If using <u>any</u> subs or suppliers submit Affidavit A instead</li> <li>Affidavits C and D not required</li> </ul>
<b>Letter of Intent</b> <ul style="list-style-type: none"> <li>Bidder must submit <b>a separate</b> Letter of Intent for each MWBE subcontractor listed on Affidavit C or Affidavit D.</li> </ul>	Due within <b>3 business days</b> of notice of being apparent LRRB.
<b>Affidavit C</b> <i>MWBE Subcontractor Utilization Commitment</i> <ul style="list-style-type: none"> <li>Bidder meets the 15% MWBE Goal</li> <li>List all MWBE firms to be utilized</li> </ul>	Due within <b>3 business days</b> of notice of being apparent LRRB.
<b>Affidavit D</b> <i>Good Faith Efforts (GFE) &amp; Statement of Compliance</i> <ul style="list-style-type: none"> <li>Bidder does not meet the 15% MWBE Goal</li> <li>Documentation of GFE to be provided</li> <li>Minimum of 50 points</li> </ul>	Due within <b>3 business days</b> of notice of being apparent LRRB.
REPORT FORMS	
DOCUMENT	SUBMISSION REQUIREMENTS
Contract Subcontractor Identification Form	Due within 30 days of contract award.
MWBE Good Faith Negotiation and Solicitation Forms (Optional)	Due upon request by the MWBE office.
<b>Affidavit E</b> <i>Subcontractor Payment Form</i>	Each invoice and final payment request.
<b>Request to Change MWBE Subcontractor</b> <ul style="list-style-type: none"> <li>Firm may replace MWBE subcontractor</li> <li>For cause <b>and</b> with approval of the City</li> <li>Good Faith Efforts apply.</li> </ul>	Due throughout entire contract period. Anytime MWBE subcontractor change(s)



# Minority and Women-owned Business Enterprise Program (MWBE)

## Explanation of Affidavit A

### A Listing of the Good Faith Effort (GFE)

Company has made a good faith effort to recruit minority businesses in accordance with N.C. Gen. Stat. § 143-128.2 and represents that it has performed the following (check all that apply; note that a minimum of fifty (50) points must be achieved):

**Examples of ways to satisfy requirements are given for each criterion below:**

- 1. (10 points) Contacted minority businesses that reasonably could have been expected to submit a quote and that were known to the contractor or available on State or local government maintained lists, at least 10 days before the bid date and notified them of the nature and scope of the work to be performed.
  - **Provide a list of potential bidders with proof of acknowledged responses (i.e. quotes)**
  - **Provide confirmation of notification at least 10 days before bid date**
  - **Newspaper/trade ads do not qualify as GFE notification**
  
- 2. (10 points) Made the construction plans, specifications and requirements available for review by prospective minority businesses, or provided these documents to them at least 10 days before the bids are due.
  - **Provide confirmation of notification at least 10 days before bid date**
  - **Include in the notice that plan specs are available in office/online (location/link) and at no cost to MWBEs**
  - **Newspaper/trade ads do not qualify as GFE notification**
  
- 3. (15 points) Broke down or combined elements of work into economically feasible units to facilitate minority participation.
  - **Provide confirmation of solicitation that include subcontracting opportunities (i.e. itemize or group trades such as flooring/trim or divide one sub does flooring and another sub does trim)**
  
- 4. (10 points) Worked with minority trade, community, or contractor organizations identified by the Office of Historically Underutilized Businesses and included in the bid documents that provide assistance in recruitment of minority businesses.
  - **Obtain letter or other documentation from one of these organizations indicating that you are working with them in the recruitment of minority businesses – NCMWBE Coordinators Network, The Institute, NCIEDI or HCAC.**
  - **A list of organizations can be found at [www.raleighnc.gov/mwbe](http://www.raleighnc.gov/mwbe)**



- 5. (10 points) Attended pre-bid meetings scheduled by the public owner.
  - **Attendance is recorded (make sure you sign-in)**
  
- 6. (20 points) Provided assistance in getting required bonding or insurance or provided alternatives to bonding or insurance for subcontractors.
  - **Include one of the following statements in solicitation to MWBEs as it applies:**
    - **Bonds are not required for this project**
    - **Bidder will assist in procuring bonds or insurance if necessary**
  
- 7. (15 points) Negotiated in good faith with interested minority businesses and did not reject them as unqualified without sound reasons based on their capabilities. Any rejection of a minority business based on lack of qualification should have the reasons documented in writing.
  - **“MWBE Solicitation Form” is attached to the Explanation Affidavit A Form**
    - **Provide completed MWBE Solicitation Form to document the following:**
    - **Did not receive low quotes from MWBEs**
    - **Bidder accepted other low quotes from MWBEs**
    - **Written reasons for rejection of any low quotes from MWBEs**
  
- 8. (25 points) Provided assistance to an otherwise qualified minority business in need of equipment, loan capital, lines of credit, or joint pay agreements to secure loans, supplies, or letters of credit, including waiving credit that is ordinarily required. Assisted minority businesses in obtaining the same unit pricing with the bidder’s suppliers in order to help minority businesses in establishing credit.
  - **Indicate in solicitation the following are available: equipment, loan capital, lines of credit, or joint pay agreements for qualified MWBEs or any other needs.**
  - **Document recent history of doing joint pay agreements such as “in the recent past, we have done joint pay agreements (lines of credit, waiving of credit, etc.) with the following MWBEs (x company, y company, z company) and intend to offer the same on this project for qualified MWBEs”**
  - **Provide letter from vendor/supplier indicating that they will give the same pricing to MWBEs quoting to you as vendor/supplier gives directly to you**
  
- 9. (20 points) Negotiated joint venture and partnership arrangements with minority businesses in order to increase opportunities for minority business participation on a public construction or repair project when possible.
  - **Indicate in solicitation that opportunities to negotiate joint venture and partnership arrangements are available**
  
- 10. (20 points) Provided quick pay agreements and policies to enable minority contractors and suppliers to meet cash flow demands.
  - **Indicate in solicitation that quick pay agreements are available for certified MWBEs to include payment terms (i.e., Net 30).**
  - **Document recent history of doing quick pay agreements such as “in the recent past, we have done quick pay agreements with the following MWBE’s (x company, y company, z company) and intend to offer the same on this project for qualified MWBE’s”**



**GENERAL:**

- REFERENCE ALL CONTRACT DOCUMENTS, SPECIFICATIONS AND DRAWINGS FOR ADDITIONAL REQUIREMENTS AND CONTRACT RESPONSIBILITIES PRIOR TO COMMENCING WORK.
- CAMERA PLACEMENT AND ORIENTATION SUBJECT TO OWNER APPROVAL PRIOR TO FINAL INSTALLATION.
- CAMERA MOUNTING INSTALLATION DETAILS INDICATE MOUNTING ORIENTATION ONLY AND ARE SUBJECT TO OWNER MODIFICATION.
- CONTRACTOR SHALL SUBMIT ALL MOUNTING HARDWARE AND LOCATIONS AS PART OF INSTALLATION SUBMITTAL.
- CONTRACTOR SHALL REFERENCE AND IMPLEMENT ALL CITY OF RALEIGH STANDARD CONSTRUCTION DETAILS AND SPECIFICATIONS.
- ELECTRICAL SUB-CONTRACTOR SHALL REFERENCE ALL CONTRACT DRAWINGS PRIOR TO INSTALLATION OR DEMOLITION OF CONDUIT, RACEWAYS, CONDUCTORS, AND BONDING COMPONENTS.
- CONDUIT AND CABLE LENGTHS ARE FOR REFERENCE ONLY.
- CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING RACEWAY ROUTING AND MATERIAL QUANTITIES.

**KEYNOTES:**

- USE EXISTING CONDUIT AND CABLING.
- USE EXISTING CONDUIT, PROVIDE NEW CABLING.
- PROVIDE NEW CONDUIT AND CABLING.
- WIRELESS ACCESS POINT PROVIDED BY CITY IT.
- CAMERAS NOT INCLUDED IN SCOPE OF WORK, ACCOUNT FOR FUTURE SWITCH CAPACITY ONLY.

INDEX	RACEWAY ID TAG	FROM DESCRIPTION	FROM ID TAG	TO DESCRIPTION	TO ID TAG	CABLE/CONDUCTOR/WIRE	RACEWAY SIZE	RACEWAY TYPE	RACEWAY LENGTH	REMARKS
1	C-1001	MAIN GATE EXIT	CAM-1001	MAIN GATE SECURITY PANEL	NP-1024	[8C#23 F/UTP]	N/A	N/A	N/A	NOTE 1
2	C-1002	MAIN GATE INTERCOM	CAM-1002	MAIN GATE SECURITY PANEL	NP-1024	[8C#23 F/UTP]	N/A	N/A	N/A	NOTE 1
3	C-1003	MAIN GATE ENTRY	CAM-1003	MAIN GATE SECURITY PANEL	NP-1024	[8C#23 F/UTP]	N/A	N/A	N/A	NOTE 1
4	C-1004	MAIN GATE ENTRY2	CAM-1004	MAIN GATE SECURITY PANEL	NP-1024	[8C#23 F/UTP]	N/A	N/A	N/A	NOTE 1
5	C-1005	NORTH GATE INTERCOM	CAM-1005	NORTH GATE SECURITY PANEL	NP-1020	[8C#23 F/UTP]	N/A	N/A	N/A	NOTE 1
6	C-1006	NORTH GATE ENTRY	CAM-1006	NORTH GATE SECURITY PANEL	NP-1020	[8C#23 F/UTP]	N/A	N/A	N/A	NOTE 1
7	C-1007	NORTH GATE ENTRY 2	CAM-1007	NORTH GATE SECURITY PANEL	NP-1020	[8C#23 F/UTP]	N/A	N/A	N/A	NOTE 1
8	C-1008	DW GATE INTERCOM	CAM-1008	DEWATERING GATE SECURITY PANEL	NP-1014	[8C#23 F/UTP]	N/A	N/A	N/A	NOTE 1
9	C-1009	DW GATE ENTRY	CAM-1009	DEWATERING GATE SECURITY PANEL	NP-1014	[8C#23 F/UTP]	N/A	N/A	N/A	NOTE 1
10	C-1010	DW ENTRANCE2	CAM-1010	DEWATERING GATE SECURITY PANEL	NP-1014	[8C#23 F/UTP]	N/A	N/A	N/A	NOTE 1
11	C-1011	DW ENTRANCE	CAM-1011	DEWATERING GATE SECURITY PANEL	NP-1014	[8C#23 F/UTP]	N/A	N/A	N/A	NOTE 1
12	C-1011A	DW REAR	CAM-1011A	DEWATERING GATE SECURITY PANEL	NP-1014	[8C#23 F/UTP]	0.75"	PVC	50'	NOTE 3
13	C-1012	DW SIDE ENTRANCE	CAM-1012	DEWATERING GATE SECURITY PANEL	NP-1014	[8C#23 F/UTP]	N/A	N/A	N/A	NOTE 1
14	C-1013	CELL TOWER	CAM-1013	CCL BUILDING SECURITY PANEL	NP-1022	[8C#23 F/UTP]	N/A	N/A	N/A	NOTE 1
15	C-1013A	MAINTENANCE BUILDING	CAM-1013A	MAINTENANCE BUILDING SECURITY PANEL	NP-1016	[8C#23 F/UTP]	0.75"	RMC	50'	NOTE 3
16	C-1014	CLARIFIER ENTRANCE	CAM-1014	THICKENER BUILDING SECURITY PANEL	NP-1011	[8C#23 F/UTP]	N/A	N/A	N/A	NOTE 1
17	C-1015	CLARIFIER INSIDE (THICKENED SLUDGE PS UPPER)	CAM-1015	THICKENER BUILDING SECURITY PANEL	NP-1011	[8C#23 F/UTP]	N/A	N/A	N/A	NOTE 1
18	C-1015A	THICKENED SLUDGE PS LOWER	CAM-1015A	THICKENER BUILDING SECURITY PANEL	NP-1011	[8C#23 F/UTP]	0.75"	RMC	50'	NOTE 3
19	C-1016	BULK WEST	CAM-1016	BULK CHEMICAL BUILDING SECURITY PANEL	NP-1017	[8C#23 F/UTP]	0.75"	PVC	100'	NOTE 3
20	C-1016A	BULK NORTH	CAM-1016A	BULK CHEMICAL BUILDING SECURITY PANEL	NP-1017	[8C#23 F/UTP]	0.75"	PVC	100'	NOTE 3
21	C-1016B	BULK EAST	CAM-1016B	BULK CHEMICAL BUILDING SECURITY PANEL	NP-1017	[8C#23 F/UTP]	0.75"	PVC	100'	NOTE 3
22	C-1016C	BULK SOUTH	CAM-1016C	BULK CHEMICAL BUILDING SECURITY PANEL	NP-1017	[8C#23 F/UTP]	0.75"	PVC	100'	NOTE 3
23	C-1017	BULK WEST ENTRY	CAM-1017	BULK CHEMICAL BUILDING SECURITY PANEL	NP-1017	[8C#23 F/UTP]	0.75"	PVC	100'	NOTE 3
24	C-1018	BULK EAST ENTRY	CAM-1018	BULK CHEMICAL BUILDING SECURITY PANEL	NP-1017	[8C#23 F/UTP]	0.75"	PVC	100'	NOTE 3
25	C-1019	BULK NORTH ENTRY	CAM-1019	BULK CHEMICAL BUILDING SECURITY PANEL	NP-1017	[8C#23 F/UTP]	0.75"	PVC	100'	NOTE 3
26	C-1020	HYP0 INTERIOR	CAM-1020	BULK HYPOCHLORITE BUILDING SECURITY PANEL	NP-1018	[8C#23 F/UTP]	0.75"	PVC	75'	NOTE 3
27	C-1021	HYP0 OFFLOADING	CAM-1021	BULK HYPOCHLORITE BUILDING SECURITY PANEL	NP-1018	[8C#23 F/UTP]	0.75"	PVC	75'	NOTE 3
28	C-1021A	HYP0 BUILDING EAST EXTERIOR	CAM-1021A	BULK HYPOCHLORITE BUILDING SECURITY PANEL	NP-1018	[8C#23 F/UTP]	0.75"	PVC	75'	NOTE 3
29	C-1022	PRE-CHEM EAST ENTRY	CAM-1022	PRE-CHEM BUILDING SECURITY PANEL	NP-1019	[8C#23 F/UTP]	N/A	N/A	N/A	NOTE 1
30	C-1023	PRE-CHEM NORTH	CAM-1023	PRE-CHEM BUILDING SECURITY PANEL	NP-1019	[8C#23 F/UTP]	N/A	N/A	N/A	NOTE 1
31	C-1024	INTERM BREEZEWAY	CAM-1024	OZONE BASEMENT SECURITY PANEL	NP-1004	[8C#23 F/UTP]	N/A	N/A	N/A	NOTE 1
32	C-1024A	TRAINING FACILITY PARKING LOT	CAM-1024A	TRAINING ROOM SECURITY PANEL	NP-1010	[8C#23 F/UTP]	0.75"	RMC	75'	NOTE 3
33	C-1024B	PUMP STATION EAST EXTERIOR	CAM-1024B	PUMP STATION BUILDING SECURITY PANEL	NP-1009	[8C#23 F/UTP]	0.75"	RMC	75'	NOTE 3
34	C-1024C	PUMP STATION WEST EXTERIOR	CAM-1024C	PUMP STATION BUILDING SECURITY PANEL	NP-1009	[8C#23 F/UTP]	0.75"	RMC	75'	NOTE 3
35	C-1025	MAIN BLDG EAST ENTRANCE	CAM-1025	MAIN BUILDING SECURITY PANEL	NP-1001	[8C#23 F/UTP]	N/A	N/A	N/A	NOTE 1
36	C-1026	OZONE SOUTH	CAM-1026	OZONE ELECTRICAL ROOM SECURITY PANEL	NP-1005	[8C#23 F/UTP]	N/A	N/A	N/A	NOTE 1
37	C-1027	MAIN BLDG FRONT	CAM-1027	SECOND FLOOR MEZZANINE SECURITY PANEL	NP-1002	[8C#23 F/UTP]	N/A	N/A	N/A	NOTE 1
38	C-1028	MAIN BLDG LOBBY	CAM-1028	SECOND FLOOR MEZZANINE SECURITY PANEL	NP-1002	[8C#23 F/UTP]	N/A	N/A	N/A	NOTE 1
39	C-1029	DW MUD BIN 1	CAM-1029	DEWATERING MUD BASIN SECURITY PANEL	NP-1015	[8C#23 F/UTP]	N/A	N/A	N/A	NOTE 1
40	C-1030	DW MUD BIN 2	CAM-1030	DEWATERING MUD BASIN SECURITY PANEL	NP-1015	[8C#23 F/UTP]	N/A	N/A	N/A	NOTE 1
41	C-1031	DW MUD BIN 3	CAM-1031	DEWATERING MUD BASIN SECURITY PANEL	NP-1015	[8C#23 F/UTP]	N/A	N/A	N/A	NOTE 1
42	C-1032	DW MUD BIN 4	CAM-1032	DEWATERING MUD BASIN SECURITY PANEL	NP-1015	[8C#23 F/UTP]	N/A	N/A	N/A	NOTE 1
43	C-1033	WH TOOL CAGE	CAM-1033	WAREHOUSE BUILDING NETWORK RACK	R-1007	[8C#23 F/UTP]	N/A	N/A	N/A	NOTE 1
44	C-1034	WH OFFICE FRONT	CAM-1034	WAREHOUSE BUILDING NETWORK RACK	R-1007	[8C#23 F/UTP]	N/A	N/A	N/A	NOTE 1
45	C-1035	WH NORTH EAST	CAM-1035	WAREHOUSE BUILDING NETWORK RACK	R-1007	[8C#23 F/UTP]	N/A	N/A	N/A	NOTE 1
46	C-1036	WH SOUTH WEST	CAM-1036	WAREHOUSE BUILDING NETWORK RACK	R-1007	[8C#23 F/UTP]	N/A	N/A	N/A	NOTE 1
47	C-1037	WH NORTH WEST	CAM-1037	WAREHOUSE BUILDING NETWORK RACK	R-1007	[8C#23 F/UTP]	N/A	N/A	N/A	NOTE 1
48	C-1038	RESERVOIR WEST	CAM-1038	RESERVOIR LEVEL WEST SECURITY PANEL	NP-1025	[8C#23 F/UTP]	N/A	N/A	N/A	NOTE 1,4
49	C-1038A	RESERVOIR WEST GATE	CAM-1038A	RESERVOIR LEVEL WEST SECURITY PANEL	NP-1025	[8C#23 F/UTP]	0.75"	RMC	10'	NOTE 1,4

REV. NO.	DESCRIPTION	DATE
G	FINAL DESIGN - ISSUED FOR BID - NOT FOR CONSTRUCTION - ADDENDUM NO. 5	02.23.2023
F	FINAL DESIGN - ISSUED FOR BID - NOT FOR CONSTRUCTION - ADDENDUM NO. 2	10.21.2022
E	FINAL DESIGN - ISSUED FOR BID - NOT FOR CONSTRUCTION	09.09.2022
D	90% DESIGN - NOT FOR CONSTRUCTION	07.08.2022
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**CITY OF RALEIGH**  
 RALEIGH WATER

**EMJ AND DEB VIDEO SURVEILLANCE UPGRADE**  
 E.M. JOHNSON WATER TREATMENT PLANT  
**CONDUIT SCHEDULE 1 OF 3**

PROJ. START DATE:	2021.AUG
MCE PROJ. #	00592-0075
DRAWN	JAL
DESIGNED	JAL
CHECKED	JAG
PROJ. MGR.	NMT

SCALE: HORIZONTAL: **V10.4**  
 DRAWING NUMBER: **G**  
 REVISION: **G**  
 STATUS: **FINAL DESIGN - ISSUED FOR BID - NOT FOR CONSTRUCTION**



### GENERAL:

1. REFERENCE ALL CONTRACT DOCUMENTS, SPECIFICATIONS AND DRAWINGS FOR ADDITIONAL REQUIREMENTS AND CONTRACT RESPONSIBILITIES PRIOR TO COMMENCING WORK.
2. CAMERA PLACEMENT AND ORIENTATION SUBJECT TO OWNER APPROVAL PRIOR TO FINAL INSTALLATION.
3. CAMERA MOUNTING INSTALLATION DETAILS INDICATE MOUNTING ORIENTATION ONLY AND ARE SUBJECT TO OWNER MODIFICATION.
4. CONTRACTOR SHALL SUBMIT ALL MOUNTING HARDWARE AND LOCATIONS AS PART OF INSTALLATION SUBMITTAL.
5. CONTRACTOR SHALL REFERENCE AND IMPLEMENT ALL CITY OF RALEIGH STANDARD CONSTRUCTION DETAILS AND SPECIFICATIONS.
6. ELECTRICAL SUB-CRACKTOR SHALL REFERENCE ALL CONTRACT DRAWINGS PRIOR TO INSTALLATION OR DEMOLITION OF CONDUIT, RACEWAYS, CONDUCTORS, AND BONDING COMPONENTS.
7. CONDUIT AND CABLE LENGTHS ARE FOR REFERENCE ONLY.
8. CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING RACEWAY ROUTING AND MATERIAL QUANTITIES.

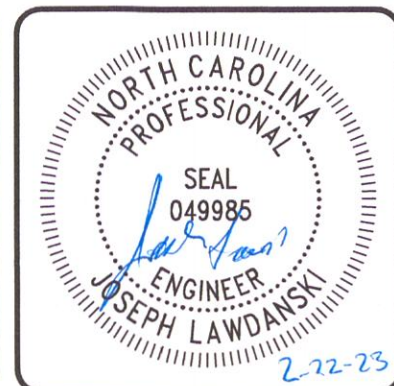
### KEYNOTES:

- ① USE EXISTING CONDUIT AND CABLING.
- ② USE EXISTING CONDUIT, PROVIDE NEW CABLING.
- ③ PROVIDE NEW CONDUIT AND CABLING.
- ④ WIRELESS ACCESS POINT PROVIDED BY CITY IT.
- ⑤ CAMERAS NOT INCLUDED IN SCOPE OF WORK, ACCOUNT FOR FUTURE SWITCH CAPACITY ONLY.

INDEX	RACEWAY ID TAG	FROM DESCRIPTION	FROM ID TAG	TO DESCRIPTION	TO ID TAG	CABLE/CONDUCTOR/WIRE	RACEWAY SIZE	RACEWAY TYPE	RACEWAY LENGTH	REMARKS
50	C-1039	SP UNLOADING	CAM-1039	SODIUM PERMENGENATE BUILDING SECURITY PANEL	NP-1023	[8C#23 F/UTP]	N/A	N/A	N/A	NOTE 1
51	C-1040	SP BULK STORAGE	CAM-1040	SODIUM PERMENGENATE BUILDING SECURITY PANEL	NP-1023	[8C#23 F/UTP]	N/A	N/A	N/A	NOTE 1
52	C-1041	SP EXIT GATE	CAM-1041	SODIUM PERMENGENATE BUILDING SECURITY PANEL	NP-1023	[8C#23 F/UTP]	N/A	N/A	N/A	NOTE 1
53	C-1042	SP CONTAINMENT AREA	CAM-1042	SODIUM PERMENGENATE BUILDING SECURITY PANEL	NP-1023	[8C#23 F/UTP]	N/A	N/A	N/A	NOTE 1
54	C-1043	SP PUMP ROOM	CAM-1043	SODIUM PERMENGENATE BUILDING SECURITY PANEL	NP-1023	[8C#23 F/UTP]	N/A	N/A	N/A	NOTE 1
55	C-1044	SP PUMP ROOM 2	CAM-1044	SODIUM PERMENGENATE BUILDING SECURITY PANEL	NP-1023	[8C#23 F/UTP]	N/A	N/A	N/A	NOTE 1
56	C-1044A	SP ELECTRICAL ROOM	CAM-1044A	SODIUM PERMENGENATE BUILDING SECURITY PANEL	NP-1023	[8C#23 F/UTP]	N/A	N/A	N/A	NOTE 1
57	C-1045	WH SOUTHEAST LOADING DOCK	CAM-1045	WAREHOUSE BUILDING NETWORK RACK	R-1007	[8C#23 F/UTP]	N/A	N/A	N/A	NOTE 1
58	C-1046	WH RECEIVING DOOR	CAM-1046	WAREHOUSE BUILDING NETWORK RACK	R-1007	[8C#23 F/UTP]	N/A	N/A	N/A	NOTE 1
59	C-1047	SP OUTSIDE NORTH	CAM-1047	SODIUM PERMENGENATE BUILDING SECURITY PANEL	NP-1023	[8C#23 F/UTP]	N/A	N/A	N/A	NOTE 1
60	C-1048	FLOC SED ELEC WEST	CAM-1048	FLOC SED ELECTRICAL BUILDING SECURITY PANEL	NP-1021	[8C#23 F/UTP]	N/A	N/A	N/A	NOTE 1
61	C-1049	FLOC SED ELEC EAST	CAM-1049	FLOC SED ELECTRICAL BUILDING SECURITY PANEL	NP-1021	[8C#23 F/UTP]	N/A	N/A	N/A	NOTE 1
62	C-1050	FLOC SED ELEC NORTH	CAM-1050	FLOC SED ELECTRICAL BUILDING SECURITY PANEL	NP-1021	[8C#23 F/UTP]	N/A	N/A	N/A	NOTE 1
63	C-1051	FLOC SED ELEC SOUTH	CAM-1051	FLOC SED ELECTRICAL BUILDING SECURITY PANEL	NP-1021	[8C#23 F/UTP]	N/A	N/A	N/A	NOTE 1
64	C-1052	WH BACKLOADING DOCK	CAM-1052	WAREHOUSE BUILDING NETWORK RACK	R-1007	[8C#23 F/UTP]	N/A	N/A	N/A	NOTE 1
65	C-1053	RESERVOIR EAST	CAM-1053	RESERVOIR LEVEL EAST SECURITY PANEL	NP-1026	[8C#23 F/UTP]	N/A	N/A	N/A	NOTE 1
66	C-1054	SED BASINS 3-4-5 CORNER	CAM-1054	FLOC SED ELECTRICAL BUILDING SECURITY PANEL	NP-1021	[8C#23 F/UTP]	0.75"	RMC	75'	NOTE 3
67	C-1055A	SED BASINS 1-2-3 REAR	CAM-1055A	PRE-CHEM BUILDING SECURITY PANEL	NP-1019	[8C#23 F/UTP]	0.75"	RMC	50'	NOTE 3
68	C-1055B	SED BASINS 3-4-5 REAR	CAM-1055B	PRE-CHEM BUILDING SECURITY PANEL	NP-1019	[8C#23 F/UTP]	0.75"	RMC	75'	NOTE 3
69	C-1056	FILTER BASIN 1-3	CAM-1056	FILTER GALLERY BUILDING NETWORK RACK	R-1012	[8C#23 F/UTP]	0.75"	RMC	100'	NOTE 3
70	C-1056A	FILTER BASIN 4-7	CAM-1056A	FILTER GALLERY BUILDING NETWORK RACK	R-1012	[8C#23 F/UTP]	0.75"	RMC	100'	NOTE 3
71	C-1056B	FILTER BASIN 8-11	CAM-1056B	FILTER GALLERY BUILDING NETWORK RACK	R-1012	[8C#23 F/UTP]	0.75"	RMC	100'	NOTE 3
72	C-1056C	FILTER BASIN 12-14	CAM-1056C	FILTER GALLERY BUILDING NETWORK RACK	R-1012	[8C#23 F/UTP]	0.75"	RMC	100'	NOTE 3
73	C-1056D	FILTER BASIN 15-17	CAM-1056D	FILTER GALLERY BUILDING NETWORK RACK	R-1012	[8C#23 F/UTP]	0.75"	RMC	100'	NOTE 3
74	C-1057	RESERVOIR EAST GATE	CAM-1057	RESERVOIR LEVEL EAST SECURITY PANEL	NP-1026	[8C#23 F/UTP]	0.75"	RMC	50'	NOTE 3,4
75	C-1058	RESERVOIR WEST DOCK	CAM-1058	RESERVOIR LEVEL WEST SECURITY PANEL	NP-1025	[8C#23 F/UTP]	0.75"	RMC	150'	NOTE 4
76	C-1059	PS-PUMPS	CAM-1059	PUMP STATION BUILDING SECURITY PANEL	NP-1009	[8C#23 F/UTP]	0.75"	RMC	50'	NOTE 3
77	C-1060A	PS-ELECTRICALRM-SGGENATSLINEUP 1	CAM-1060A	PUMP STATION BUILDING SECURITY PANEL	NP-1009	[8C#23 F/UTP]	0.75"	RMC	50'	NOTE 3
78	C-1060B	PS-ELECTRICALRM-SGGENATSLINEUP 2	CAM-1060B	PUMP STATION BUILDING SECURITY PANEL	NP-1009	[8C#23 F/UTP]	0.75"	RMC	50'	NOTE 3
79	C-1060C	PS-ELECTRICALRM-SGGENATSLINEUP 3	CAM-1060C	PUMP STATION BUILDING SECURITY PANEL	NP-1009	[8C#23 F/UTP]	0.75"	RMC	50'	NOTE 3
80	C-1060D	PS-ELECTRICALRM-SGGENATSLINEUP 4	CAM-1060D	PUMP STATION BUILDING SECURITY PANEL	NP-1009	[8C#23 F/UTP]	0.75"	RMC	50'	NOTE 3
81	C-1061	PS-TRANSFORMERM-SGLINEUP	CAM-1061	PUMP STATION BUILDING SECURITY PANEL	NP-1009	[8C#23 F/UTP]	0.75"	RMC	50'	NOTE 3
82	C-1062	PS-GENERATORS	CAM-1062	PUMP STATION BUILDING SECURITY PANEL	NP-1009	[8C#23 F/UTP]	0.75"	RMC	50'	NOTE 3
83	C-1063	CAUSTIC PUMP ROOM 1	CAM-1063	PRE-CHEM BUILDING SECURITY PANEL	NP-1019	[8C#23 F/UTP]	0.75"	PVC COATED RMC/RMC	25'	NOTE 3
84	C-1064	CAUSTIC PUMP ROOM 2	CAM-1064	PRE-CHEM BUILDING SECURITY PANEL	NP-1019	[8C#23 F/UTP]	0.75"	PVC COATED RMC/RMC	25'	NOTE 3
85	C-1065	CAUSTIC PUMP ROOM 3	CAM-1065	PRE-CHEM BUILDING SECURITY PANEL	NP-1019	[8C#23 F/UTP]	0.75"	PVC COATED RMC/RMC	25'	NOTE 3
86	C-1066	FLUORIDE PUMP ROOM	CAM-1066	PRE-CHEM BUILDING SECURITY PANEL	NP-1019	[8C#23 F/UTP]	0.75"	PVC COATED RMC/RMC	50'	NOTE 3
87	C-1067	CARBON ACCESS ROOM	CAM-1067	PRE-CHEM BUILDING SECURITY PANEL	NP-1019	[8C#23 F/UTP]	0.75"	PVC COATED RMC/RMC	50'	NOTE 3
88	C-1068	AMMONIA ROOM	CAM-1068	PRE-CHEM BUILDING SECURITY PANEL	NP-1019	[8C#23 F/UTP]	0.75"	PVC COATED RMC/RMC	50'	NOTE 3
89	C-1069	FERRIC ROOM	CAM-1069	PRE-CHEM BUILDING SECURITY PANEL	NP-1019	[8C#23 F/UTP]	0.75"	PVC COATED RMC/RMC	50'	NOTE 3
90	C-1070	CARBON PUMPS	CAM-1070	PRE-CHEM BUILDING SECURITY PANEL	NP-1019	[8C#23 F/UTP]	0.75"	PVC COATED RMC/RMC	75'	NOTE 3
91	C-1071	POLYMER ROOM 1	CAM-1071	PRE-CHEM BUILDING SECURITY PANEL	NP-1019	[8C#23 F/UTP]	0.75"	PVC COATED RMC/RMC	75'	NOTE 3
92	C-1072	POLYMER ROOM 2	CAM-1072	PRE-CHEM BUILDING SECURITY PANEL	NP-1019	[8C#23 F/UTP]	0.75"	PVC COATED RMC/RMC	75'	NOTE 3
93	C-1073	POLYMER ROOM 3	CAM-1073	PRE-CHEM BUILDING SECURITY PANEL	NP-1019	[8C#23 F/UTP]	0.75"	PVC COATED RMC/RMC	75'	NOTE 3
94	C-1073A	POLYMER ELECTRICAL ROOM	CAM-1073A	PRE-CHEM BUILDING SECURITY PANEL	NP-1019	[8C#23 F/UTP]	0.75"	PVC COATED RMC/RMC	75'	NOTE 3
95	C-1074	RAPID MIX 1 & 2 SOUTH ENTRANCE	CAM-1074	FLASH MIX 1 & 2 SECURITY PANEL (FUTURE)	NP-1029	[8C#23 F/UTP]	0.75"	RMC	0'	NOTE 5
96	C-1074A	RAPID MIX 1 & 2 CHEMICAL INJECTION	CAM-1074A	FLASH MIX 1 & 2 SECURITY PANEL (FUTURE)	NP-1029	[8C#23 F/UTP]	0.75"	RMC	0'	NOTE 5
97	C-1074B	RAPID MIX 1 & 2 MIXERS	CAM-1074B	FLASH MIX 1 & 2 SECURITY PANEL (FUTURE)	NP-1029	[8C#23 F/UTP]	0.75"	RMC	0'	NOTE 5
98	C-1074C	RAPID MIX 1 & 2 NORTH ENTRANCE	CAM-1074C	FLASH MIX 1 & 2 SECURITY PANEL (FUTURE)	NP-1029	[8C#23 F/UTP]	0.75"	RMC	0'	NOTE 5
99	C-1075	RAPID MIX 3 & 4 EXTERIOR	CAM-1075	FLASH MIX 1 & 2 SECURITY PANEL (FUTURE)	NP-1029	[8C#23 F/UTP]	0.75"	RMC	0'	NOTE 5
100	C-1075A	RAPID MIX 3 & 4 CHEMICAL INJECTION	CAM-1075A	FLASH MIX 1 & 2 SECURITY PANEL (FUTURE)	NP-1029	[8C#23 F/UTP]	0.75"	RMC	0'	NOTE 5
101	C-1075B	RAPID MIX 3 & 4 MIXERS	CAM-1075B	FLASH MIX 1 & 2 SECURITY PANEL (FUTURE)	NP-1029	[8C#23 F/UTP]	0.75"	RMC	0'	NOTE 5

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D	FINAL DESIGN - ISSUED FOR BID - NOT FOR CONSTRUCTION - ADDENDUM NO. 8	02.22.2023
F	FINAL DESIGN - ISSUED FOR BID - NOT FOR CONSTRUCTION - ADDENDUM NO. 2	10.21.2022
E	FINAL DESIGN - ISSUED FOR BID - NOT FOR CONSTRUCTION	09.09.2022
D	90% DESIGN - NOT FOR CONSTRUCTION	07.09.2022
C	80% DESIGN - NOT FOR CONSTRUCTION	10.23.2022
B	PRELIMINARY DESIGN - NOT FOR CONSTRUCTION	04.15.2022
A	EXISTING CONDITIONS - FOR CLIENT REVIEW	12.09.2021

REVISIONS



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**CITY OF RALEIGH**  
RALEIGH WATER

**EMJ AND DEB VIDEO SURVEILLANCE UPGRADE**

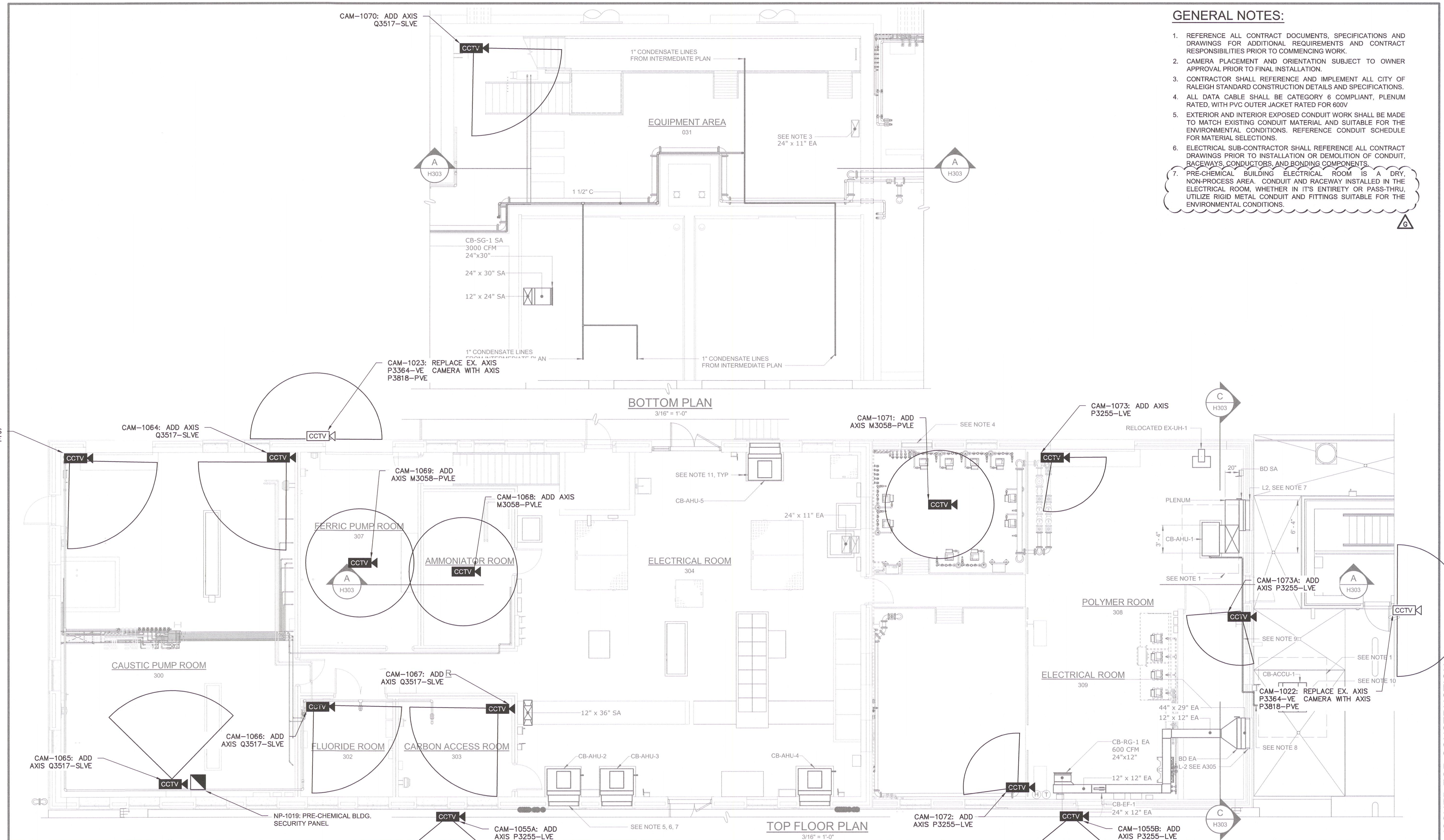
**E.M. JOHNSON WATER TREATMENT PLANT**

**CONDUIT SCHEDULE 2 OF 3**

PROJ. START DATE: 2021.AUG	SCALE
DRAWN: JAG	HORIZONTAL: <b>V10.5</b>
DESIGNED: JAG	TBD
CHECKED: JAG	VERTICAL: TBD
PROJ. MGR: NMT	REVISION

STATUS: **FINAL DESIGN - ISSUED FOR BID - NOT FOR CONSTRUCTION**





- GENERAL NOTES:**
1. REFERENCE ALL CONTRACT DOCUMENTS, SPECIFICATIONS AND DRAWINGS FOR ADDITIONAL REQUIREMENTS AND CONTRACT RESPONSIBILITIES PRIOR TO COMMENCING WORK.
  2. CAMERA PLACEMENT AND ORIENTATION SUBJECT TO OWNER APPROVAL PRIOR TO FINAL INSTALLATION.
  3. CONTRACTOR SHALL REFERENCE AND IMPLEMENT ALL CITY OF RALEIGH STANDARD CONSTRUCTION DETAILS AND SPECIFICATIONS.
  4. ALL DATA CABLE SHALL BE CATEGORY 6 COMPLIANT, PLENUM RATED, WITH PVC OUTER JACKET RATED FOR 600V.
  5. EXTERIOR AND INTERIOR EXPOSED CONDUIT WORK SHALL BE MADE TO MATCH EXISTING CONDUIT MATERIAL AND SUITABLE FOR THE ENVIRONMENTAL CONDITIONS. REFERENCE CONDUIT SCHEDULE FOR MATERIAL SELECTIONS.
  6. ELECTRICAL SUB-CONTRACTOR SHALL REFERENCE ALL CONTRACT DRAWINGS PRIOR TO INSTALLATION OR DEMOLITION OF CONDUIT, RACEWAYS, CONDUCTORS, AND BONDING COMPONENTS.
  7. PRE-CHEMICAL BUILDING ELECTRICAL ROOM IS A DRY, NON-PROCESS AREA. CONDUIT AND RACEWAY INSTALLED IN THE ELECTRICAL ROOM, WHETHER IN ITS ENTIRETY OR PASS-THRU, UTILIZE RIGID METAL CONDUIT AND FITTINGS SUITABLE FOR THE ENVIRONMENTAL CONDITIONS.

- LEGEND:**
- CCTV CAMERA TO BE REPLACED
  - NEW CCTV CAMERA TO BE INSTALLED
  - SECURITY PANEL
  - DEMO SECURITY PANEL
  - EXISTING CAMERA VIEW
  - NEW CAMERA VIEW

**REVISED AFTER FINAL DESIGN NOTE  
DISCLAIMER DECEMBER 2021**  
 BASE DRAWINGS WERE PREVIOUSLY DESIGNED BY HAZEN AND SAWYER IN JANUARY 2021 AND WERE PROVIDED TO MCKIM & CREED BY RALEIGH WATER IN OCTOBER 2021. MCKIM & CREED DOES NOT CERTIFY THE ACCURACY OF THESE BASE DRAWINGS. ONLY THE CAMERA LOCATIONS AND NETWORK COMPONENT LOCATIONS SHOWN ARE CERTIFIED BY MCKIM & CREED.

REV	ISSUED FOR	DATE	BY
3	CONSTRUCTION	01/2021	TWD
2	PERMITTING	11/2020	TWD
1	REGULATORY APPROVAL	9/2020	TWD

PROJECT ENGINEER:	T. DAVIS
DESIGNED BY:	J. POPE
DRAWN BY:	N. BURGER
CHECKED BY:	D. REAGAN

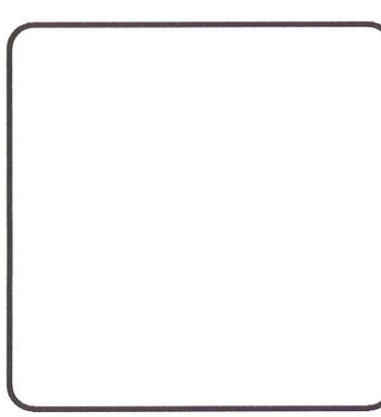
**Hazen**  
 HAZEN AND SAWYER  
 4011 WESTCHASE BOULEVARD, SUITE 500  
 RALEIGH, NORTH CAROLINA 27607  
 LICENSE NO.: C-0381

CITY OF RALEIGH  
 NORTH CAROLINA  
 E.M. JOHNSON WATER TREATMENT PLANT  
 FLOCCULATION AND SEDIMENTATION  
 BASINS 1 THROUGH 4 MODIFICATIONS

PRE-CHEMICAL BUILDING  
 HVAC  
 FLOOR PLANS

DATE:	JANUARY 2021
HAZEN NO.:	32475-000
CONTRACT NO.:	01
DRAWING NUMBER:	H301

REV. NO.	DESCRIPTION	DATE
G	FINAL DESIGN - ISSUED FOR BID - NOT FOR CONSTRUCTION - ADDENDUM NO. 4	02.22.2023
F	FINAL DESIGN - ISSUED FOR BID - NOT FOR CONSTRUCTION - ADDENDUM NO. 2	10.21.2022
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C	60% DESIGN - NOT FOR CONSTRUCTION	06.23.2022
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**CITY OF RALEIGH**  
 RALEIGH WATER

**EMJ AND DEB VIDEO SURVEILLANCE  
 UPGRADE**  
 E.M. JOHNSON WATER TREATMENT PLANT  
 PRE-CHEMICAL BUILDING

PROJ. START DATE:	2021.AUG
MCE PROJ. #	00592-0075
DRAWN	JAL
DESIGNED	JAL
CHECKED	JAG
PROJ. MGR.	NMT

SCALE: HORIZONTAL: N/A, VERTICAL: N/A

**Y11.1**  
 DRAWING NUMBER  
 G  
 REVISION

STATUS: **FINAL DESIGN - ISSUED FOR BID - NOT FOR CONSTRUCTION**

FINAL DRAWINGS - ISSUED FOR CONSTRUCTION

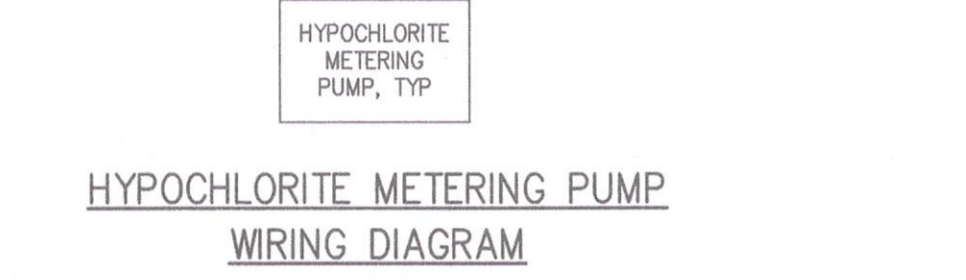


**GENERAL NOTES:**

1. REFERENCE ALL CONTRACT DOCUMENTS, SPECIFICATIONS AND DRAWINGS FOR ADDITIONAL REQUIREMENTS AND CONTRACT RESPONSIBILITIES PRIOR TO COMMENCING WORK.
2. CAMERA PLACEMENT AND ORIENTATION SUBJECT TO OWNER APPROVAL PRIOR TO FINAL INSTALLATION.
3. CONTRACTOR SHALL REFERENCE AND IMPLEMENT ALL CITY OF RALEIGH STANDARD CONSTRUCTION DETAILS AND SPECIFICATIONS.
4. ALL DATA CABLE SHALL BE CATEGORY 6 COMPLIANT, PLENUM RATED, WITH PVC OUTER JACKET RATED FOR 600V
5. EXTERIOR AND INTERIOR EXPOSED CONDUIT SHALL BE MADE TO MATCH EXISTING CONDUIT MATERIAL AND SUITABLE FOR THE ENVIRONMENTAL CONDITIONS. REFERENCE CONDUIT SCHEDULE FOR MATERIAL SELECTIONS.
6. ELECTRICAL SUB-CONTRACTOR SHALL REFERENCE ALL CONTRACT DRAWINGS PRIOR TO INSTALLATION OR DEMOLITION OF CONDUIT, RACEWAYS, CONDUCTORS, AND BONDING COMPONENTS.
7. WHERE EXISTING CABLING IS NOT INSTALLED IN CONDUIT OR RACEWAY, CABLE SHALL BE DEMOLISHED AND NEW CONDUIT AND CABLING INSTALLED IN ACCORDANCE WITH THE CONDUIT SCHEDULE.

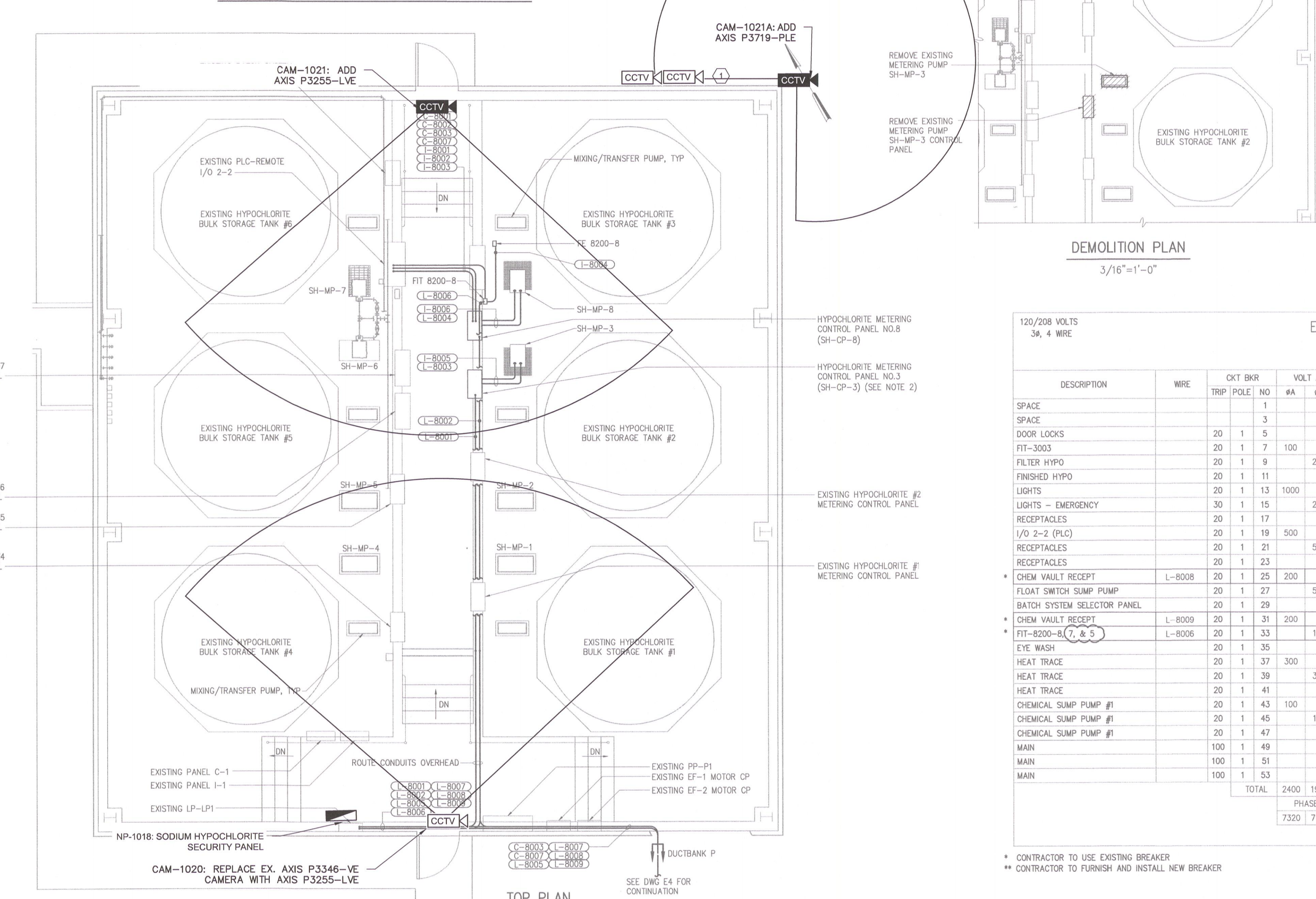
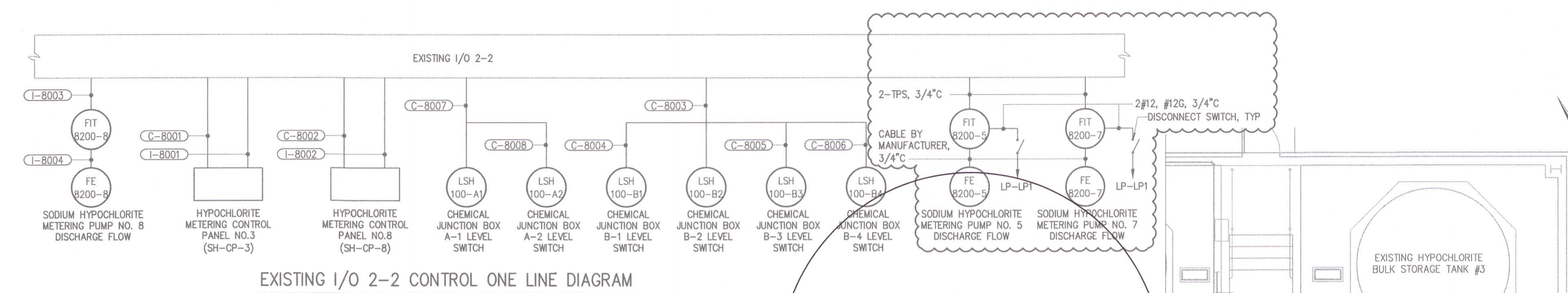
**INSTALLATION KEYNOTES:**

- 1 REMOVE TWO EXISTING CAMERAS AND PROVIDE WEATHERPROOF BLANK PLATES. REROUTE CONDUIT TO EXTERIOR CORNER AND MOUNT NEW CAMERA.



**HYPOCHLORITE METERING PUMP WIRING SCHEDULE**

EQUIPMENT DESCRIPTION	(L-XXXX)	(L-YYYY)	(L-ZZZZ)
SH-MP-3	(L-8001)	(L-8002)	(L-8005)
SH-MP-8	(L-8002)	(L-8004)	(L-8006)



**DEMOLITION PLAN**  
3/16"=1'-0"

120/208 VOLTS  
3Ø, 4 WIRE

**EXISTING LP-LP1** TYPE: MOUNT: SURFACE

DESCRIPTION	WIRE	TRIP	POLE	NO	VOLT AMPERE			VOLT AMPERE			WIRE	DESCRIPTION		
					#A	#B	#C	#A	#B	#C				
SPACE				1	1000			2	2	20	L-8005	BASE CHEM JUNCTION BOX HEATERS **		
SPACE				3				4	20			BASE CHEM JUNCTION BOX HEATERS		
DOOR LOCKS		20	1	5					6	20		SPACE **		
FIT-3003		20	1	7	100				8	1	20	SMOKE DETECTORS		
FILTER HYPO		20	1	9			200		900	10	1	20	LIGHTS	
FINISHED HYPO		20	1	11			200		1100	12	1	20	LIGHTS	
LIGHTS		20	1	13	1000				1100	14	1	20	LIGHTS	
LIGHTS - EMERGENCY		30	1	15			200		600	16	1	30	LIGHTS	
RECEPTACLES		20	1	17			900			18	1	20	RECEPTACLES	
I/O 2-2 (PLC)		20	1	19	500				720	20	1	20	RECEPTACLES	
RECEPTACLES		20	1	21			540		720	22	1	20	RECEPTACLES	
RECEPTACLES		20	1	23			540			24	1	20	SPARE	
CHEM VAULT RECEPT	L-8008	20	1	25	200				500	26	1	20	FLOAT SWITCH SUMP PUMP	
FLOAT SWITCH SUMP PUMP		20	1	27			500		200	28	1	20	NoOCL METERING PUMP #6	
BATCH SYSTEM SELECTOR PANEL		20	1	29			200		200	30	1	20	BATCH SYSTEM CONTROL PANEL #2	
CHEM VAULT RECEPT	L-8009	20	1	31	200				200	32	1	20	BATCH SYSTEM CONTROL PANEL #1	
FIT-8200-8, (7, & 5)	L-8006	20	1	33			100		500	34	1	20	L-8001 SH-CP-3 *	
EYE WASH		20	1	35			100		500	36	1	20	L-8002 SH-CP-8 *	
HEAT TRACE		20	1	37	300				500	38	1	20	HEAT TRACE	
HEAT TRACE		20	1	39			300		500	40	1	20	HEAT TRACE	
HEAT TRACE		20	1	41			300		200	42	1	20	NoOCL METERING PUMP #7	
CHEMICAL SUMP PUMP #1		20	1	43	100				300	44	1	20	CHEMICAL SUMP PUMP #2	
CHEMICAL SUMP PUMP #1		20	1	45			100		300	46	1	20	CHEMICAL SUMP PUMP #2	
CHEMICAL SUMP PUMP #1		20	1	47			100		500	300	48	1	20	CHEMICAL SUMP PUMP #2
MAIN		100	1	49					500	50	2	20	L-8007 ACID CHEM JUNCTION BOX HEATERS *	
MAIN		100	1	51					500	52	20		ACID CHEM JUNCTION BOX HEATERS *	
MAIN		100	1	53					350	54	1	20	NoOCL HEAT TRACE	
TOTAL		2400	1940	2440					4920	5220	3730	TOTAL		
PHASE TOTAL		7320	7160	6170					20650			TOTAL LOAD		

\* CONTRACTOR TO USE EXISTING BREAKER  
\*\* CONTRACTOR TO FURNISH AND INSTALL NEW BREAKER

ALL WORK SHOWN ON THIS DRAWINGS SHALL BE PERFORMED UNDER ALTERNATE 1

- LEGEND:**
- CCTV - CCTVCAMERA TO BE REPLACED
  - CCTV - NEW CCTVCAMERA TO BE INSTALLED
  - SECURITY PANEL
  - DEMO SECURITY PANEL
  - EXISTING CAMERA VIEW
  - NEW CAMERA VIEW

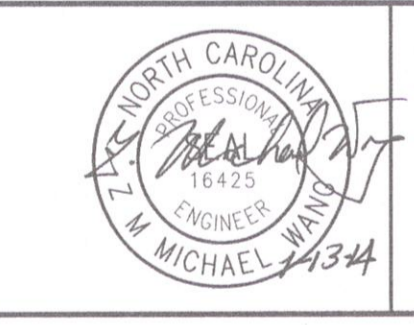
**REVISED AFTER FINAL DESIGN NOTE**  
**DISCLAIMER DECEMBER 2021**  
BASE DRAWINGS WERE PREVIOUSLY DESIGNED BY HAZEN AND SAWYER IN JANUARY 2014 AND WERE PROVIDED TO MCKIM & CREED BY RALEIGH WATER IN OCTOBER 2021. MCKIM & CREED DOES NOT CERTIFY THE ACCURACY OF THESE BASE DRAWINGS. ONLY THE CAMERA LOCATIONS AND NETWORK COMPONENT LOCATIONS SHOWN ARE CERTIFIED BY MCKIM & CREED.

NO.	ISSUED FOR	DATE	BY	APPROVED
3	RECORD DRAWINGS	DEC 2013	ZMW	
2	ISSUED FOR BIDDING	OCT 2005	REJ	
1	REGULATORY APPROVAL	JUNE 2005	REJ	
	ISSUED FOR	DATE	BY	APPROVED

DESIGNED: BRL/JDH  
DRAWN: JDH  
CHECKED: [Signature]  
PROJ. ENGR.: REJ

THIS DOCUMENT ORIGINALLY ISSUED FOR CONSTRUCTION AND SEALED BY Z.M. MICHAEL WANG, SEAL NUMBER 16425.  
THIS DOCUMENT ORIGINALLY ISSUED FOR CONSTRUCTION AND SEALED BY BRYAN R. LISK, SEAL NUMBER 030529.

**RECORD DRAWING**  
THIS DRAWING HAS BEEN MODIFIED TO REFLECT FIELD CHANGES REPORTED BY THE CONTRACTOR OR ANOTHER PARTY, BUT NOT VERIFIED BY THE CERTIFYING ENGINEER



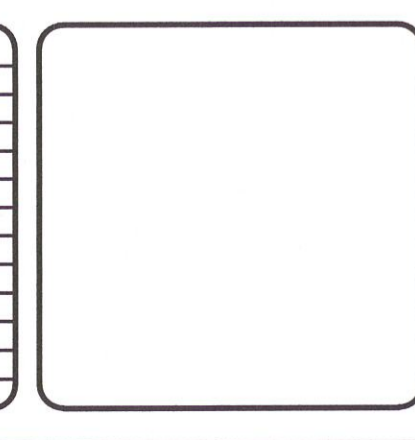
**HAZEN AND SAWYER**  
Environmental Engineers & Scientists  
4011 WestChase Blvd, Raleigh, North Carolina 27607

**CITY OF RALEIGH**  
NORTH CAROLINA  
50 mgd FW PUMP AND BW PUMP ADDITION  
E.M. JOHNSON WATER TREATMENT PLANT

**ELECTRICAL**  
SODIUM HYPOCHLORITE FACILITY  
CHEMICAL ADDITION FEED SYSTEM  
PLANS AND DIAGRAMS

DATE	OCT 2005
H & S JOB NUMBER	30924
CONTRACT NUMBER	5
DRAWING NUMBER	E80
FLAT FILE #2	

REV. NO.	DESCRIPTION	DATE
D	FINAL DESIGN - ISSUED FOR BID - NOT FOR CONSTRUCTION - ADDENDUM NO. 5	02.22.2023
F	FINAL DESIGN - ISSUED FOR BID - NOT FOR CONSTRUCTION - ADDENDUM NO. 2	10.21.2022
E	FINAL DESIGN - ISSUED FOR BID - NOT FOR CONSTRUCTION	09.09.2022
D	90% DESIGN - NOT FOR CONSTRUCTION	07.08.2022
C	80% DESIGN - NOT FOR CONSTRUCTION	05.28.2022
B	PRELIMINARY DESIGN - NOT FOR CONSTRUCTION	04.15.2022
A	EXISTING CONDITIONS - FOR CLIENT REVIEW	12.09.2021



**MCKIM & CREED**  
Venture IV Building, Suite 500  
1730 Varsity Drive  
Raleigh, North Carolina 27606-2689  
Phone: (919) 233-8091, Fax: (919) 233-8031  
NC License# F-1222  
www.mckimcreed.com

**CITY OF RALEIGH**  
RALEIGH WATER

**EMJ AND DEB VIDEO SURVEILLANCE UPGRADE**  
E.M. JOHNSON WATER TREATMENT PLANT  
SODIUM HYPOCHLORITE FACILITY

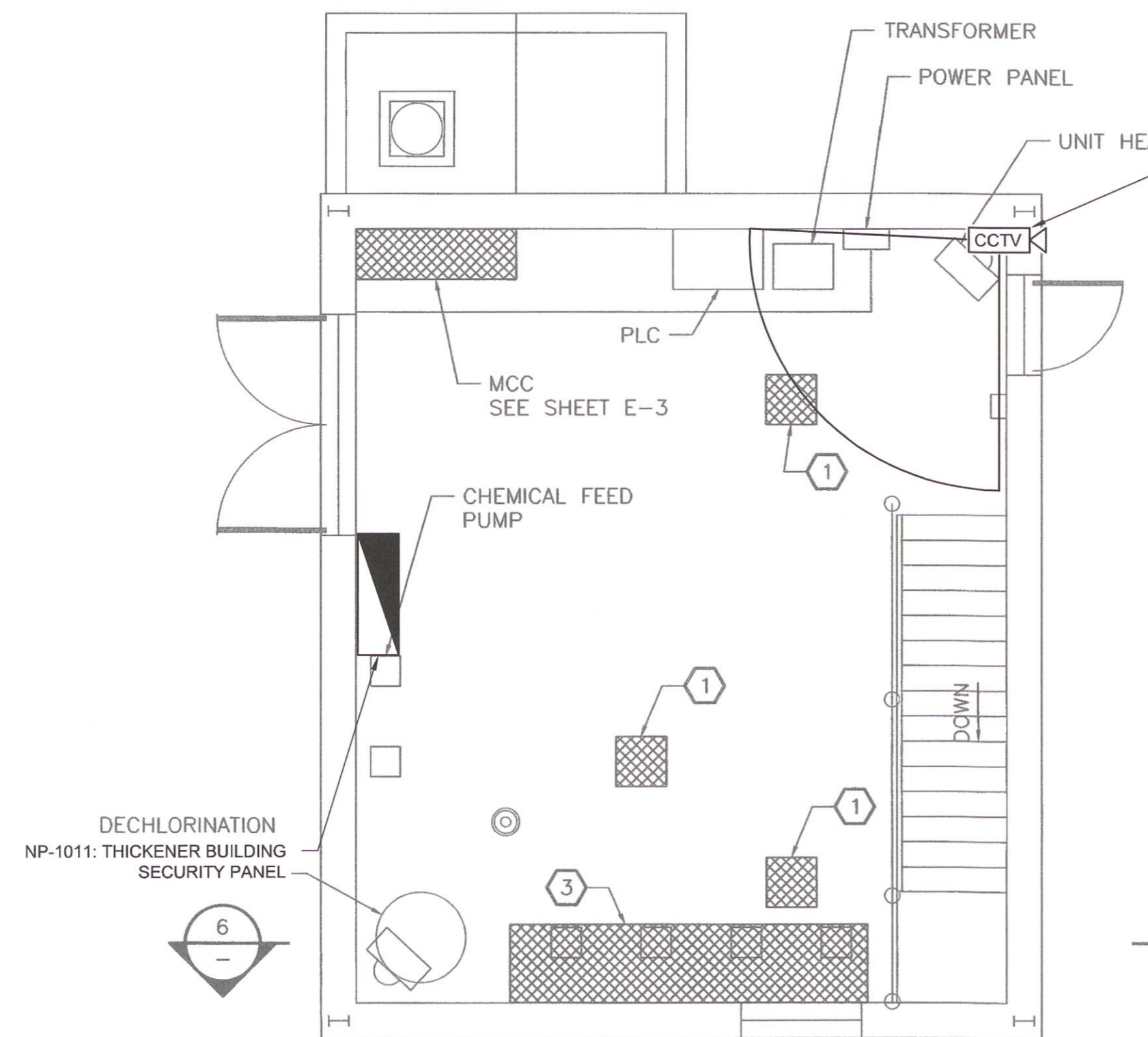
PROJ. START DATE: 2021 AUG  
MCE PROJ. #: 00592-0075  
DRAWN: JAL  
DESIGNED: JAL  
CHECKED: JAG  
PROJ. MGR.: NMT

SCALE: HORIZONTAL: Y12.0  
VERTICAL: N/A  
STATUS: FINAL DESIGN - ISSUED FOR BID - NOT FOR CONSTRUCTION

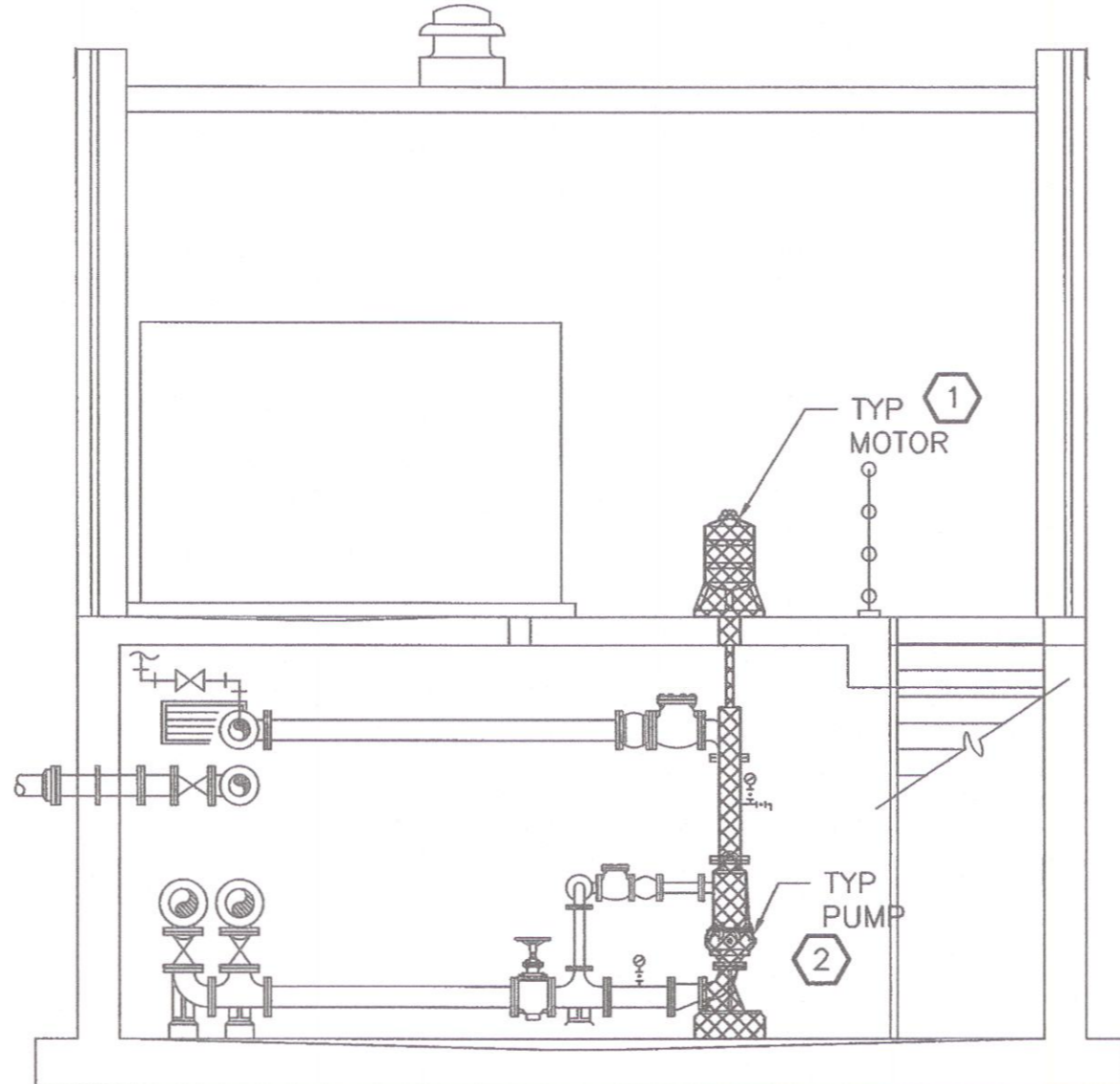




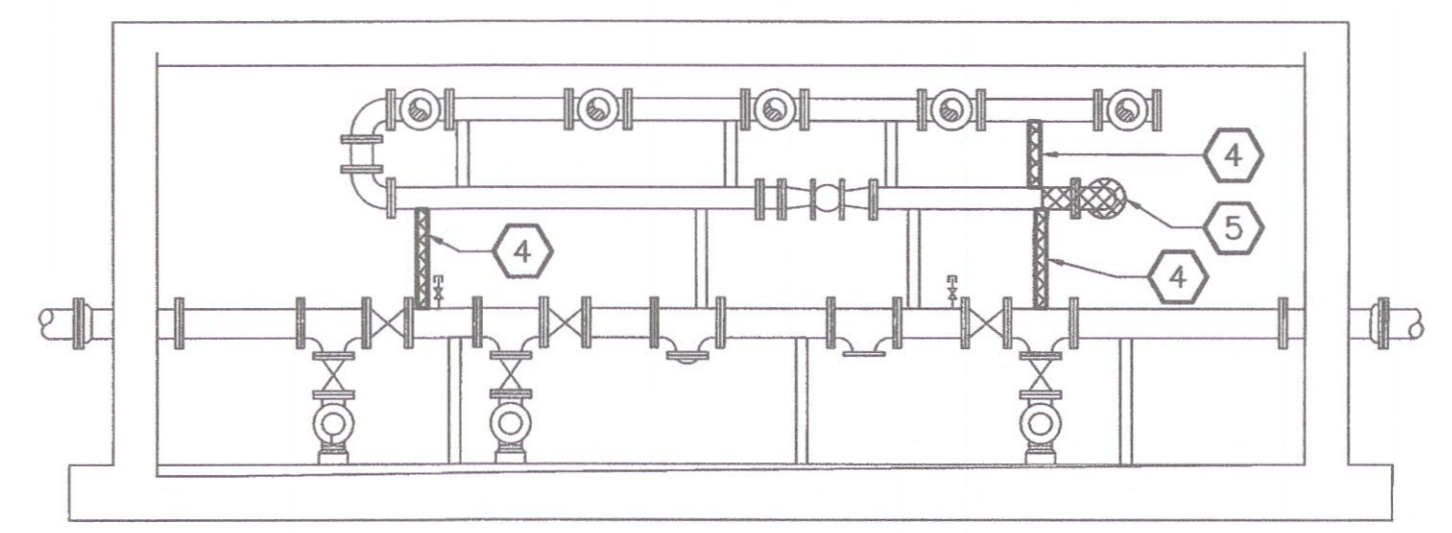




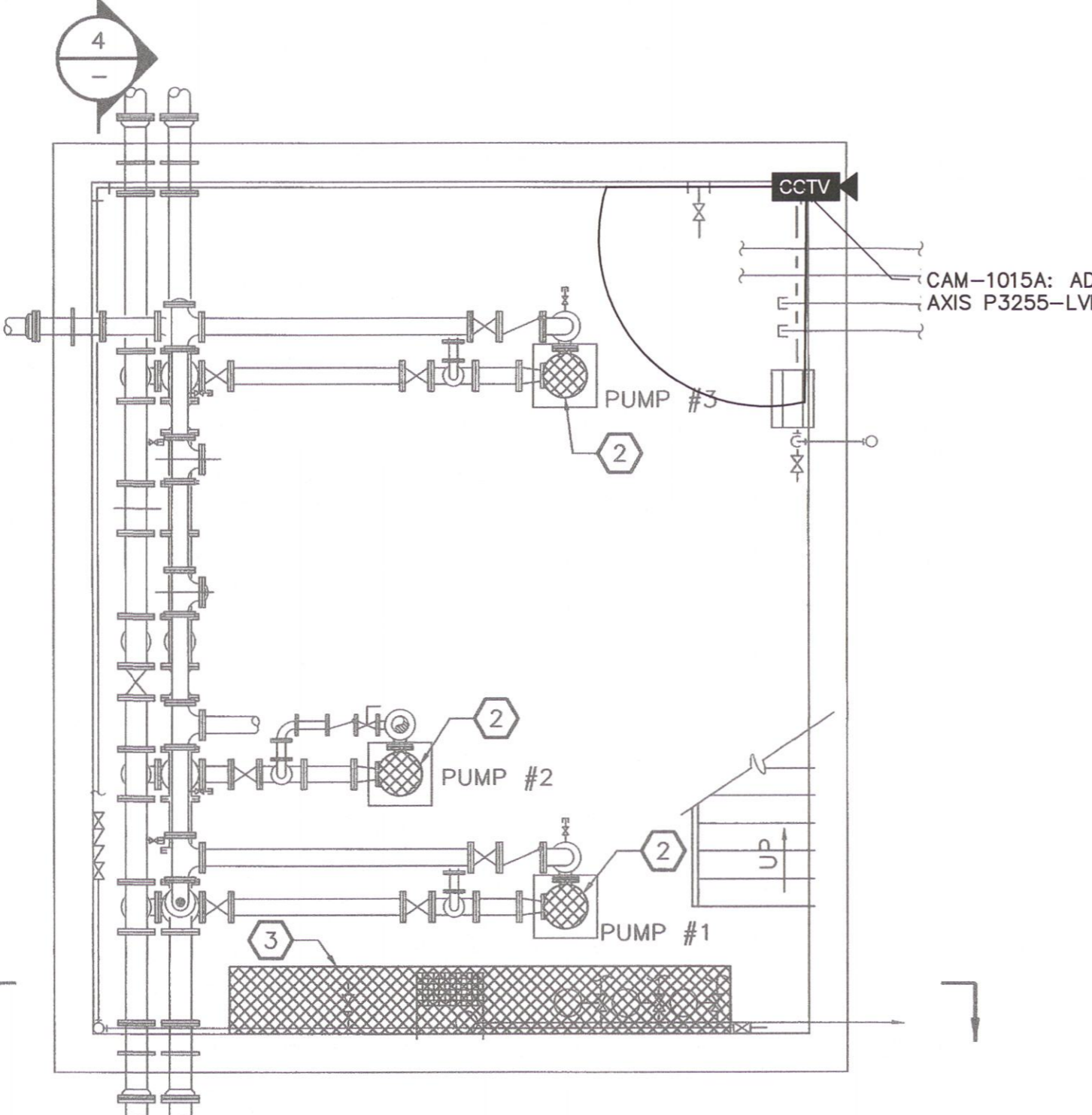
DEMOLITION PLAN - GRADE LEVEL THICKENED SLUDGE PUMP STATION  
1/4"=1'-0"



DEMOLITION SECTION THICKENED SLUDGE PUMP STATION  
1/4"=1'-0"



DEMOLITION SECTION THICKENED SLUDGE PUMP STATION  
1/4"=1'-0"



DEMOLITION PLAN - LOWER LEVEL THICKENED SLUDGE PUMP STATION  
1/4"=1'-0"

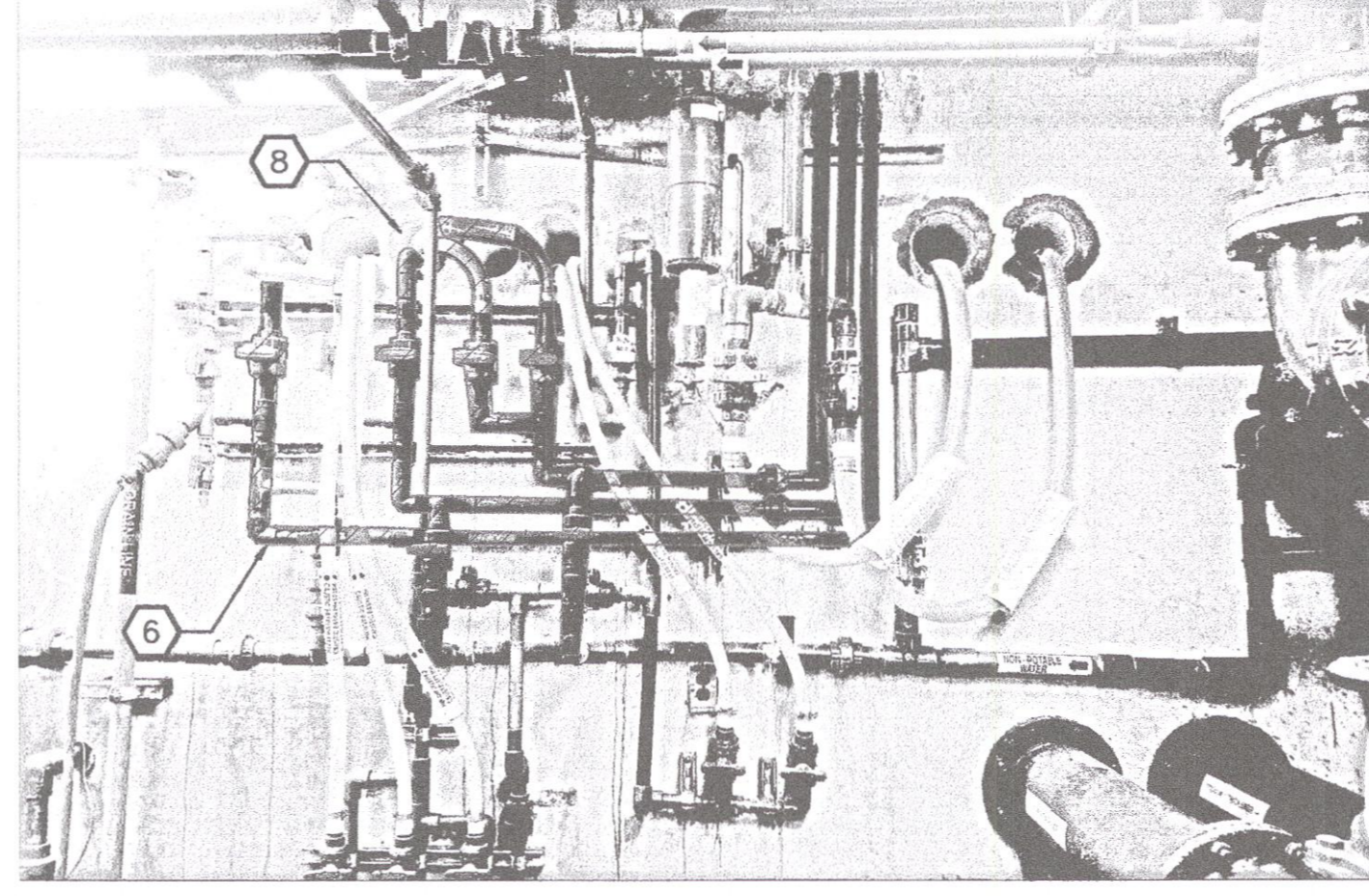


PHOTO REMOVE CHEMICAL PIPING LOWER LEVEL  
NOT TO SCALE

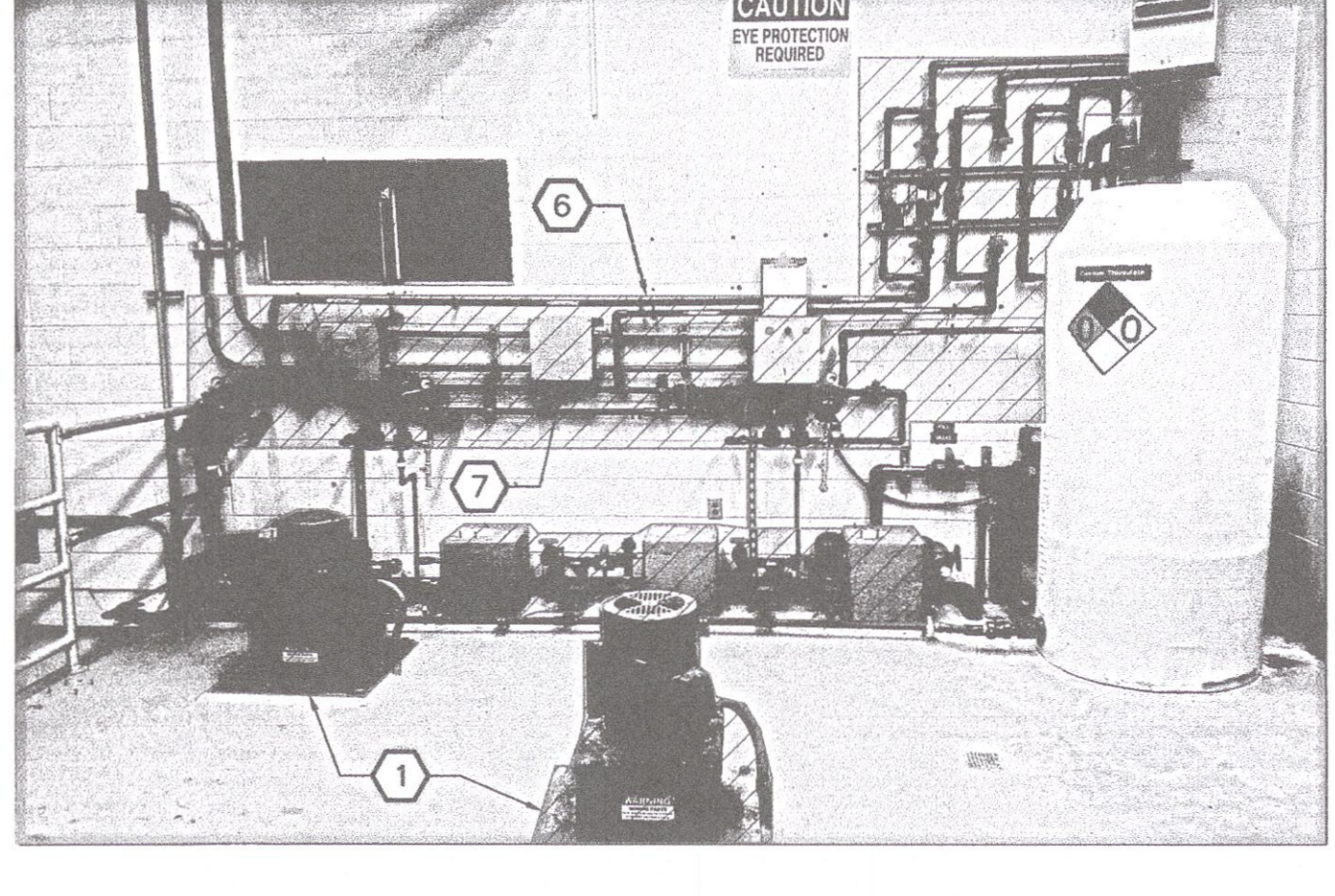
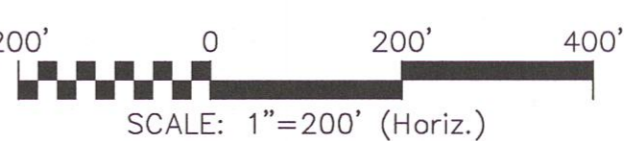


PHOTO REMOVE CHEMICAL PIPING GRADE LEVEL  
NOT TO SCALE

PLAN VIEW  
HORIZ: 1"=40'



**GENERAL NOTES:**

1. PATCH HOLES THROUGH WALLS AND FLOORS WHERE PIPES ARE REMOVED.

CAM-1015: REPLACE EX. AXIS P3346-VE CAMERA WITH AXIS P3255-LVE

CAM-1015A: ADD AXIS P3255-LVE

**GENERAL NOTES:**

**NOTES BY SYMBOL**

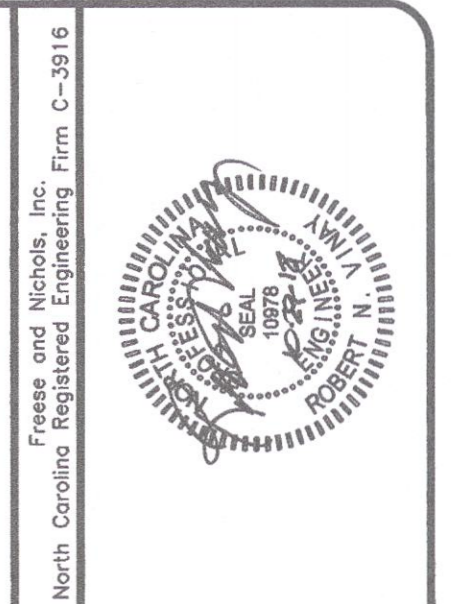
- 1 REMOVE AND DISPOSE SHAFT GUARD. FILL W/...
- 2 REMOVE EXISTING PIPING ON-SITE. DISPOSE AS...
- 3 REMOVE AND DISPOSE SEE DETAILS 5/C-10
- 4 REMOVE PIPE SUPPORT SHOWN ON 2/C-11
- 5 REPLACE 6"-90" BEN...
- 6 REMOVE PIPING AND...
- 7 REMOVE CONTROL PANELS, CONDUIT, & WIRING AS INDICATED.
- 8 CUT PIPES OFF INSIDE DUCTS AND CAP.

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**REVISED AFTER FINAL DESIGN NOTE**  
**DISCLAIMER DECEMBER 2021**  
BASE DRAWINGS WERE PREVIOUSLY DESIGNED BY FREESE AND NICHOLS IN OCTOBER 2018 AND WERE PROVIDED TO MCKIM & CREED BY RALEIGH WATER IN OCTOBER 2021. MCKIM & CREED DOES NOT CERTIFY THE ACCURACY OF THESE BASE DRAWINGS. ONLY THE CAMERA LOCATIONS AND NETWORK COMPONENT LOCATIONS SHOWN ARE CERTIFIED BY MCKIM & CREED.

Date: Oct 26, 2018 - 11:37am User: 02709 File: N:\WW\Drawings\WW-RAL-DT-THC02.dwg



**FREESE & NICHOLS**  
1017 Main Campus Drive, Suite 3100  
Raleigh, North Carolina 27606  
Phone - (919) 562-5851  
Fax - (919) 562-5852  
Web - www.freese.com

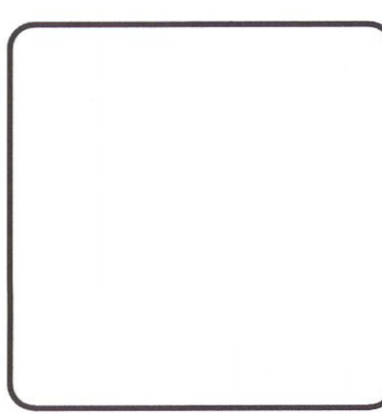
CITY OF RALEIGH  
**SLUDGE THICKENER NO. 4 IMPROVEMENTS**  
CIVIL  
**THICKENED SLUDGE PUMP STATION**  
DEMOLITION PLAN

NO.	ISSUE	DATE	BY	REVISED	FILE NAME
1	ISSUE				WW-RAL-DT-THC02.dwg

DEVELOPMENT SERVICES REVISION  
VERIFY SCALE: Bar is one inch on original drawing. If not one inch on this sheet, adjust scale.

SHEET **C-10**  
SEQ.

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**CITY OF RALEIGH**  
RALEIGH WATER

**EMJ AND DEB VIDEO SURVEILLANCE UPGRADE**  
E.M. JOHNSON WATER TREATMENT PLANT  
**THICKENED SLUDGE PUMP STATION**

PROJ. START DATE: 2021 AUG  
MCE PROJ. # 00592-0075  
DRAWN: JAL  
DESIGNED: JAL  
CHECKED: JAG  
PROJ. MGR: NMT

SCALE: HORIZONTAL: **Y12.6**  
VERTICAL: N/A

STATUS: **FINAL DESIGN ISSUED FOR BID**