Farnsworth GROUP

Addendum

Addendum Number: 03

Addendum Issue Date: January 30, 2026

Owner: Robinson-Palestine Water Commission

Project Name: Water Treatment Plant and Campus

Project Number: 0210007.00

Containing: 113Pages; 13 RFI's; 15 Drawings; 5 Specifications

This addendum amends the drawings and specifications of the above reference project and is hereby incorporated into the contract documents as part thereof. Bidders must acknowledge receipt of this Addendum in the space provided on the Bid Form. ***FAILURE TO DO SO MAY SUBJECT BIDDER TO DISQUALIFICATION****.*

General:

- Pavement thickness 8", Sidewalk thickness 6", both with 8" of Crushed Stone underneath.

Questions:

- Question: Looking through the specs on this project, could you provide a detailed list of any NETA testing that will be required from a third party NETA contractor on this project?
  - Answer: NETA testing will be required per the specifications. See the specifications for more details.
- Question: Spec section 260533.13 2.1 M lists the water treatment facility as a section that requires sch 80 PVC. On the plans the only rooms with a plan note calling sch 80 PVC out are the chem room 203 and the CL2 room 202. Does the main treatment room need sch 80 pvc for exposed conduit or is EMT allowable there?
  - Answer: Schedule 80PVC will be required in the process room per the specification.

Drawings:

- 01A1.1 – FLOOR PLAN – O/M
  - REVISE Plan General Note K to be, "CONTRACTOR TO PROCURE ALL FURNITURE. SEE GI5.0 FOR FURNITURE INFORMATION."
- 02A1.1 – FLOOR PLAN – WTP
  - ADD Elevation marker for detail #7 in OFFICE AND LAB 201
- 02A8.1 – INTERIOR ELEVATIONS, ENLARGED PLANS, AND WINDOW DETAILS
  - ADD detail #7, OFFICE/LAB ELEVATION – PLAN WEST, as shown.
- GI5.0 – FURNITURE SCHEDULES
  - ADD Overall Size column to Furniture Schedule, as shown.
- GE5.1 – ELECTRICAL SITE SCHEDULES
  - ADD luminaire type M to luminaire schedule. See attached sheets.
- 1E1.2 – OFFICE BUILDING LIGHTING PLAN
  - ADD keynotes #4, 5, and 6. See attached sheets.

  - ADD detail #2. See attached sheets.
  - ADD luminaire type M. See attached sheets.
  - ADD photocell and dimming switch. See attached sheets.
  - ADD light switch for shower and switch legs. See attached sheets.
- 1E5.2 – OFFICE BUILDING SCHEDULES
  - ADD luminaire type M to luminaire schedule. See attached sheets.
- 2E1.1 – PROCESS BUILDING LIGHTING PLAN
  - ADD keynotes #4, 5, and 6. See attached sheets.
  - ADD luminaire type M. See attached sheets.
  - ADD photocell and dimming switch. See attached sheets.
  - ADD light switch for shower and switch legs. See attached sheets.
  - ADD luminaire type M to luminaire schedule. See attached sheets.
- 2E6.1 – PROCESS BUILDING DETAILS
  - ADD detail #3 for sign lighting. See attached sheets.
- 1P1.1 – FIRST FLOOR PLUMBING PLAN – O/M
  - REVISE Kitchen sink designation to “SK-3.”
- GP6.1 – SCHEDULES
  - ADD description for SK-3 to plumbing fixture schedule.
- GM6.1- SCHEDULE
  - ADD note 7 in Ceiling Fan Schedule
- C2.1 & C3.1 – WATERMAIN PLAN
  - REPLACE sheet C2.1 & C3.1 with attached. Updated watermain connection details by Rte. 1.
- C1 – WATER MAIN PLANS & PROFILE
  - REPLACE Sheet C1 with the attached. Casing pipe size, material, and connection detail updated.
- C5.3 – VFD Shed Details 2
  - DISREGARD the following note from the sheet. “ELECTRICAL AND CONTROL WORK WILL BE DONE BY THE ROBINSON PALESTINE WATER COMMISSION"S ELECTRICIAN. THE SCHEMATIC IS SHOWN FOR INFORMATIONAL PURPOSES ONLY. ALL WORK DONE BY CONTRACTOR IS TO BE COORDINATED WITH THE COMMISSION"S ELECTRICIAN.”

Specifications:

1. Specifications C-410 – Bid Form
   Replace entire specification section with the attached. Removed alternate bid criteria from Section 3.02. Added new line items requesting deduct value(s) if multiple Divisions (Divisions A, B, and C) are awarded to a single contractor.

2. Specification 07 27 00 – Air Barriers
   ADD to Section 2.2, A, 3: a. W. R. Meadows, Inc; Air-Shield LSR: www.wrmeadows.com/#sle.

3. Specifications 09 96 00 – High Performance Coating. Replace entire specification section with the attached.

4. Specification 26 36 00 – Transfer Switches
   REVISE 2.2 E 1 and 2 to "1. Transfer Switch Type: Service entrance rated bypass/isolation automatic transfer switch." "2. Transition Configuration: Open-transition (no neutral position), utilizing in-phase monitor."
   ADD 2.2 E 9 "9. Provide camlock receptacles inside of ATS for connection of load banks and portable generators." See attached specification.
   REVISE 2.2 I to be about Open Transition. See attached specification.
   ADD 2.2 O "Bypass/Isolation Transfer Switches" and subsequent paragraphs. See attached specifications.

5. Specifications 09 91 23
   Delete entire Specification section

6. Specifications 09 96 00 – High Performance Coatings
   Replace with the attached Specifications

7. Specification 46 12 00 – Water Main Piping Valves Fittings and Accessories
   Replace the entire specification section with the attached. Attached specification has a revised section 2.1 and the latest version includes PVC SDR 21 specifications for Water Main Pipe, PVC C-900 Pipe Specifications for casing pipe.

8. Specification 22 07 19 – Plumbing Piping Insulation
   Added insulation jacketing requirements.

9. Specification 23 34 39 – High-Volume, Low-Speed Propeller Fans
   Added additional acceptable manufacturers.

10. Specification 23 34 23 – HVAC Power Ventilators
    Added additional acceptable manufacturers.

Bids are Due: No Change | local time: *No Change*

END OF ADDENDUM

Issued By: Mokammel Sanju

FARNSWORTH GROUP, INC.
Andy Hanfland
Enter Title

Attachments: 13 RFIs, Sheets: *01A1.1, 02A1.1, 02A8.1, G15.0, 1P1.1, G96.1, C1, C2.1, C3.1, GE5.1, 1E1.2, 1E5.2, 2E1.1, 2E6.1, GM6.1 Specifications: Bid Form, 22 07 19, 23 34 23, 23 34 39, 26 36 00, 46 12 00, 09 96 00*

Sanju, Mokammel

From: Sanju, Mokammel
Sent: Thursday, January 22, 2026 4:51 PM
To: Sanju, Mokammel
Subject: FW: Rob-Pal Plant Questions

From: Sanju, Mokammel <ssanju@F-W.com>
Sent: Thursday, January 22, 2026 2:28 PM
To: Sanju, Mokammel <ssanju@F-W.com>
Subject: FW: Rob-Pal Plant Questions

From: Hanfland, Andy <ahanfland@f-w.com>
Sent: Friday, January 16, 2026 9:29 AM
To: John Boyer <john@btdrainage.com>; Nuxoll, Roger <rnuxoll@F-W.com>
Cc: Sanju, Mokammel <ssanju@F-W.com>
Subject: RE: Rob-Pal Plant Questions

Answers

Natural Gas line is not a water main, sanitary sewer, water service, or a storm sewer, so no it is not included.

An addendum will be coming to address the gutter drains. Since it is small work, it would be simpler to have one company do it and I will be defining that as Div C

Water Sales Equipment is not part of Div C. The water line going to it is part of Div C

Spec for flexible joint is in the specs

No spec for septic system. Call James in Dieterich, IL of James Backhoe Service Inc. Assume a conservation installation and if it does not fit $ wise, we will adjust compensation later.

Andrew C. Hanfland P.E. / **Senior Engineering Manager**
o / 217.531.1253 d / 217.305.7614 c / 217.343.6993
FARNSWORTH GROUP

From: John Boyer <john@btdrainage.com>
Sent: Thursday, January 15, 2026 3:26 PM
To: Hanfland, Andy <ahanfland@f-w.com>; Nuxoll, Roger <rnuxoll@F-W.com>
Subject: Rob-Pal Plant Questions

Andy,

Below are our questions concerning this project:

- Is the Div C contractor responsible for the natural gas line outside of the buildings?

- Is the Div C contractor responsible for all gutter drains or just getting the main line to the building within 5'? Responsible for installing the sweeps coming out of the ground?

- Is the Div C contractor responsible for installing the Water Sales Equipment?

- Do you have a spec for the 16" flexible joint?

- Do you have a spec on the septic system?

Thank you,

--

JOHN BOYER

217-822-6593
btdrainage.com
13094 N State Hwy 1
Marshall, IL 62441

Sanju, Mokammel

From: Hanfland, Andy
Sent: Friday, January 23, 2026 11:02 AM
To: Stefancin, Kevin
Cc: Sanju, Mokammel
Subject: RE: RPWC Water Treatment Plant & Campus Questions

Kevin,

Thanks for the questions.

My responses are below;

Andrew C. Hanfland P.E. / Senior Engineering Manager
o / 217.531.1253 d / 217.305.7614 c / 217.343.6993
FARNSWORTH GROUP

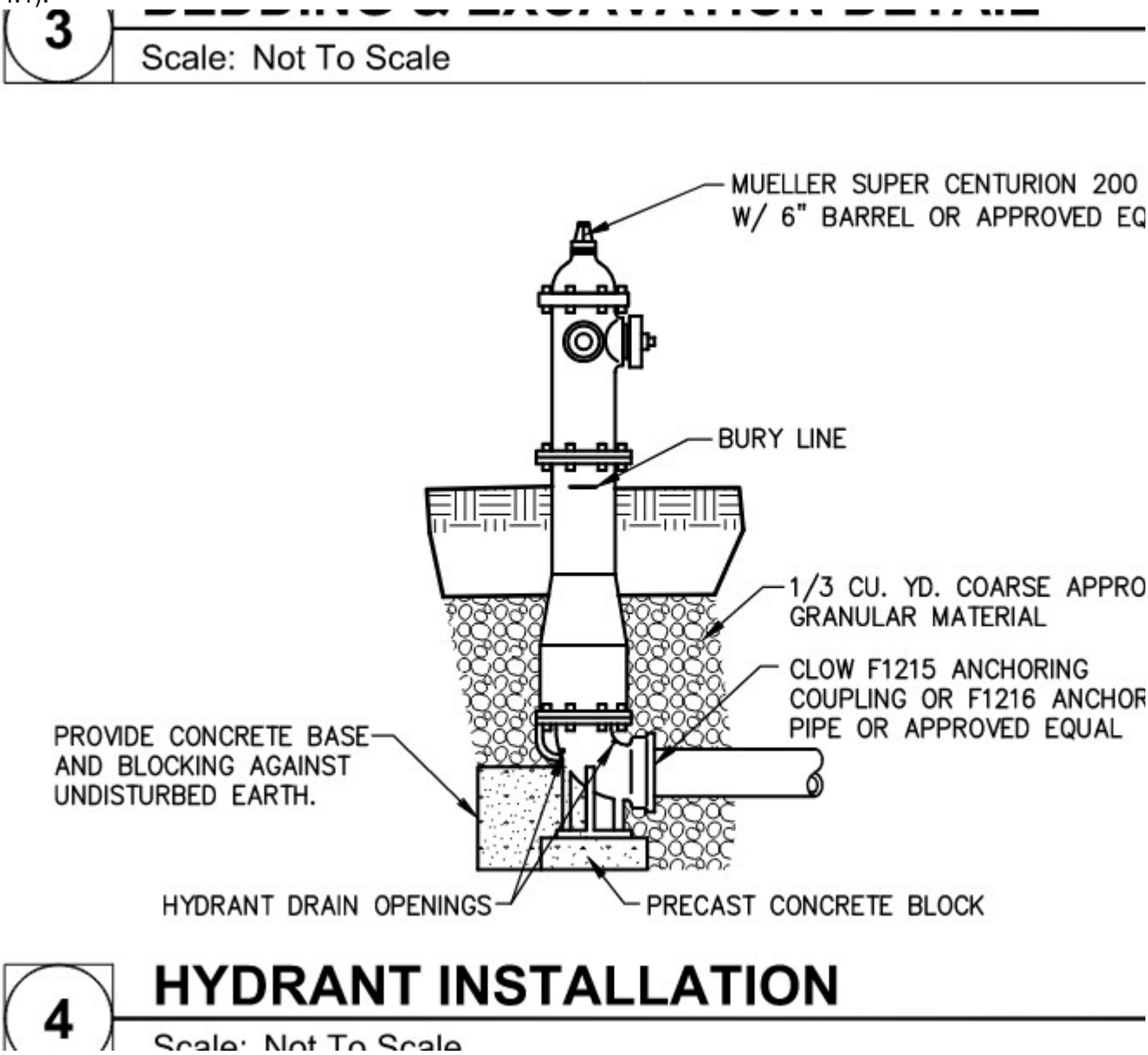
From: Stefancin, Kevin <Kevin.Stefancin@coreandmain.com>
Sent: Friday, January 23, 2026 10:37 AM
To: Hanfland, Andy <ahanfland@f-w.com>
Subject: RPWC Water Treatment Plant & Campus Questions

Good morning Andrew –

Please see below for questions related to the above-mentioned project:

1. Specification 46 12 00 for Water Main Piping calls for Mechanical Joint type ductile iron pipe joints in buried applications. Are alternate restrained pipe joints acceptable, such as HDSS joints, or push-on joints with field-lok gaskets? Yes Push on joints with joint restraint are acceptable
2. Please provide a specification for the 4” blowoff hydrants at the Head Tank (see Drawing Q3.2).

3. Please provide a specification for the 6” steamer hydrants at the Ground Storage Tanks (see Drawing Q4.1).



The steamer hydrant is a 3-way hydrant and a blowoff is a 2-way hydrant.

4. Please provide more information/details for the “SA” lines and septic field (pipe type, cleanouts, etc.) show on Drawing C2.1.

That piping will be dependent on the septic system design and provided by the licensed installer.

Thank you,

Kevin Stefancin
Senior Technical Estimator
Critical Infrastructure Group (CIG)
M: (216) 894-7261
E: kevin.stefancin@coreandmain.com

Private

Sanju, Mokammel

From: Sutyak, Tim
Sent: Monday, January 19, 2026 2:33 PM
To: Jon Earles; Sanju, Mokammel
Cc: Hanfland, Andy
Subject: Re: Robinson Water Treatment

Jon

Heat trace will be provided later, EC just needs to provide the circuit for now.

Thanks!

Tim Sutyak, PE, LC / Sr. Engineer
o / 217.352.7408 d / 217.298.9017 c / 217.381.8880

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From: Jon Earles <jearles@centralstateco.com>
Sent: Monday, January 19, 2026 10:45 AM
To: Sutyak, Tim <tsutyak@F-W.com>; Sanju, Mokammel <ssanju@F-W.com>
Cc: Hanfland, Andy <ahanfland@F-W.com>
Subject: RE: Robinson Water Treatment

Page 2E 6.1 shows a circuit for heat trace. I don't see any more information on the heat trace. Is there a spec section or a manufacturer listed for this somewhere? Is it to be provided by the EC or by the MC?
Thanks

Jon Earles
Central State Construction
15358 E. Clarksville Rd
Marshall, IL 62441
jearles@centralstateco.com
Phone: (217) 826.6152
Cell: (765) 346.6152

From: Sutyak, Tim <tsutyak@F-W.com>
Sent: Wednesday, January 14, 2026 9:13 AM
To: Jon Earles <jearles@centralstateco.com>; Sanju, Mokammel <ssanju@F-W.com>
Cc: Hanfland, Andy <ahanfland@F-W.com>
Subject: Re: Robinson Water Treatment

Schedule 80PVC will be required in the process room per the specification.

Tim Sutyak, PE, LC / Sr. Engineer
o / 217.352.7408 d / 217.298.9017 c / 217.381.8880

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From: Jon Earles <jearles@centralstateco.com>
Sent: Tuesday, January 13, 2026 2:23 PM
To: Sutyak, Tim <tsutyak@F-W.com>; Sanju, Mokammel <ssanju@F-W.com>
Cc: Hanfland, Andy <ahanfland@F-W.com>
Subject: RE: Robinson Water Treatment

Need a clarification please:

Spec section 260533.13 2.1 M lists the water treatment facility as a section that requires sch 80 PVC. On the plans the only rooms with a plan note calling sch 80 PVC out are the chem room 203 and the CL2 room 202. Does the main treatment room need sch 80 pvc for exposed conduit or is EMT allowable there?

Jon Earles
Central State Construction
15358 E. Clarksville Rd
Marshall, IL 62441
jearles@centralstateco.com
Phone: (217) 826.6152
Cell: (765) 346.6152

From: Sutyak, Tim <tsutyak@F-W.com>
Sent: Tuesday, January 6, 2026 2:39 PM
To: Sanju, Mokammel <ssanju@F-W.com>; Jon Earles <jearles@centralstateco.com>

Cc: Hanfland, Andy <ahanfland@F-W.com>
Subject: Re: Robinson Water Treatment

Jon

Same response for generac as well.

Thanks!

Tim Sutyak, PE, LC / Sr. Engineer
o / 217.352.7408 d / 217.298.9017 c / 217.381.8880

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From: Sanju, Mokammel <ssanju@F-W.com>
Sent: Tuesday, January 6, 2026 2:38 PM
To: Jon Earles <jearles@centralstateco.com>; Sutyak, Tim <tsutyak@F-W.com>
Cc: Hanfland, Andy <ahanfland@F-W.com>
Subject: RE: Robinson Water Treatment

Jon – It is a possible substitution, however, all product equivalents will be considered for approval after the contract has been awarded.

Thank you,
Sanju Mokammel / Engineering Associate II
o / 217.352.7408 d / 217.318.5858 c / 217.721.4771

FARNSWORTH GROUP
2211 West Bradley Avenue / Champaign, IL 61821
www.f-w.com


From: Jon Earles <jearles@centralstateco.com>
Sent: Tuesday, January 6, 2026 2:34 PM
To: Sutyak, Tim <tsutyak@F-W.com>
Cc: Hanfland, Andy <ahanfland@F-W.com>; Sanju, Mokammel <ssanju@F-W.com>
Subject: RE: Robinson Water Treatment

Can Hanwha vision be added as an acceptable camera system? Attached is a brochure.

Thanks

Jon Earles
Central State Construction

15358 E. Clarksville Rd
Marshall, IL 62441
jearles@centralstateco.com
Phone: (217) 826.6152
Cell: (765) 346.6152

From: Sutyak, Tim <tsutyak@F-W.com>
Sent: Tuesday, January 6, 2026 12:17 PM
To: Jon Earles <jearles@centralstateco.com>
Cc: Hanfland, Andy <ahanfland@F-W.com>; Sanju, Mokammel <ssanju@F-W.com>
Subject: Re: Robinson Water Treatment

Jon

We will address these in the upcoming addendum being issues Friday.

Also, will need to keep Andy Hanfland and Sanju Mokammel copied on further questions just to keep them aware as the PMs.

Thanks!

Tim Sutyak, PE, LC / Sr. Engineer
o / 217.352.7408 **d /** 217.298.9017 **c /** 217.381.8880

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From: Jon Earles <jearles@centralstateco.com>
Sent: Tuesday, January 6, 2026 9:43 AM
To: Sutyak, Tim <tsutyak@f-w.com>
Subject: RE: Robinson Water Treatment

Sorry got another:

For communication wiring there is a detail for J hooks and also a conduit schedule for communication wiring. Are J hooks acceptable above drop ceilings and conduit to be used in exposed areas?

Jon Earles

Central State Construction
15358 E. Clarksville Rd
Marshall, IL 62441
jearles@centralstateco.com
Phone: (217) 826.6152
Cell: (765) 346.6152

From: Jon Earles
Sent: Tuesday, January 6, 2026 8:36 AM
To: Sutyak, Tim <tsutyak@f-w.com>
Subject: Robinson Water Treatment

Hey Tim,
Got a couple questions for this project:
Sorry if I missed these somewhere

1- I see access control devices shown but there is no spec section or any details. Is this rough in only?
2- Just want to confirm no Fire Alarm systems need to be included since none are shown?
3- Can Generac be added as an approved generator manufacturer?

Jon Earles
Central State Construction
15358 E. Clarksville Rd
Marshall, IL 62441
jearles@centralstateco.com
Phone: (217) 826.6152
Cell: (765) 346.6152

Sanju, Mokammel

From: Sanju, Mokammel
Sent: Friday, January 16, 2026 1:57 PM
To: 'Mitch Heuerman'
Cc: Hanfland, Andy
Subject: RE: Robinson Palestine WTP - RFI

Mitch – Yes, 10' fence would be ample.

Thanks,
Sanju Mokammel / Engineering Associate II
o / 217.352.7408 d / 217.318.5858 c / 217.721.4771

FARNSWORTH GROUP
2211 West Bradley Avenue / Champaign, IL 61821
www.f-w.com

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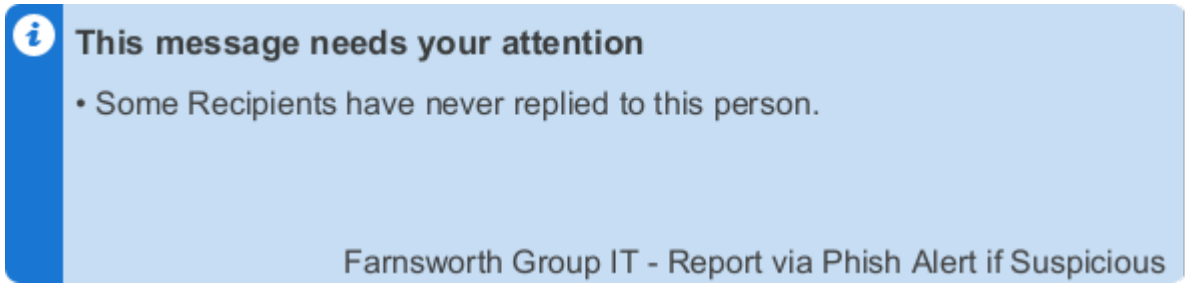
From: Mitch Heuerman <mheuerman@grunloh.com>
Sent: Friday, January 16, 2026 1:28 PM
To: Hanfland, Andy <ahanfland@f-w.com>; Sanju, Mokammel <ssanju@f-w.com>
Subject: Robinson Palestine WTP - RFI



Andy, Sanju,

Could we get confirmation on the fence height you are looking for. The specs are saying no less than 2.75 meters high, I just want to double check that you are looking for a 10' tall fence.

Thanks,

Mitchell Heuerman
Grunloh Construction Inc.
Office: 217-342-4157 | Cell: 217-821-0527
101 W. Temple Ave. P.O. Box 684 Effingham, IL 62401

GRUNLOH
BUILDING, INC.

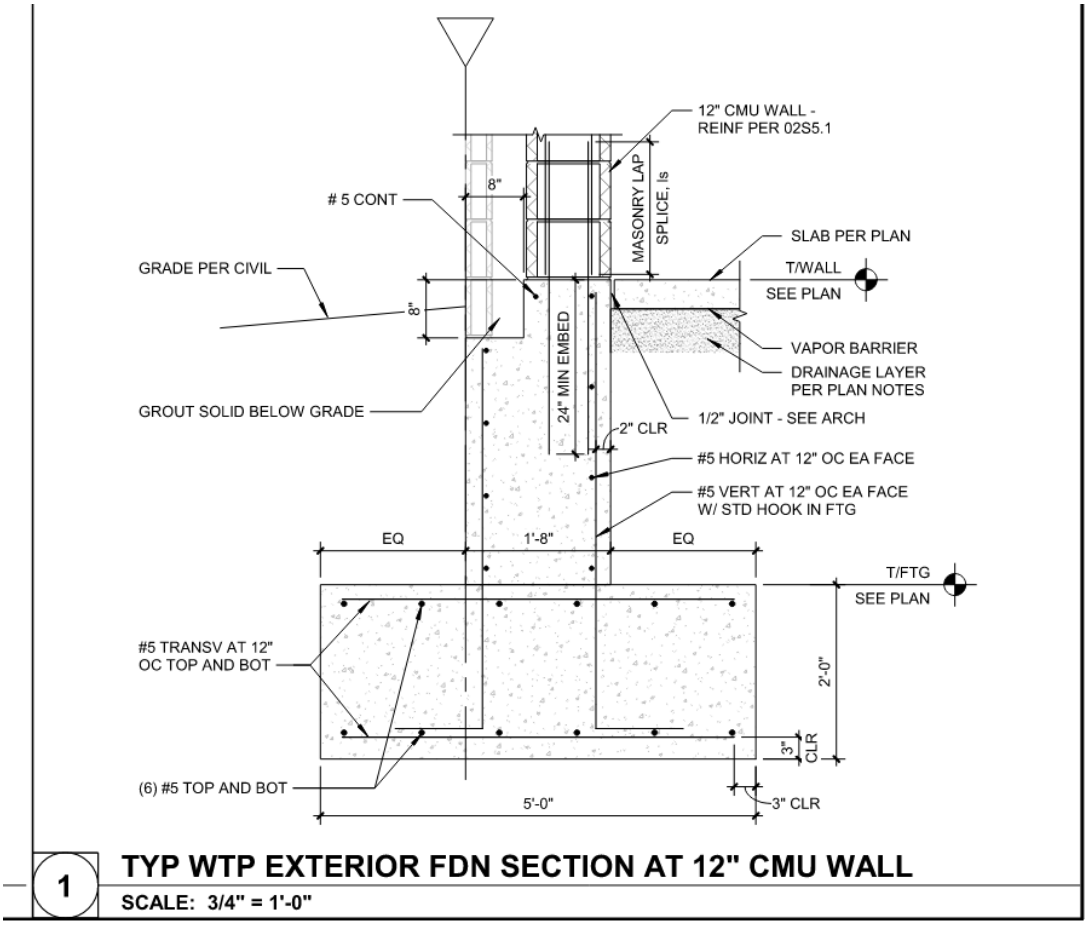
January 21, 2026

Farnsworth Group

Reference: Robinson-Palestine Water Commission – Water Treatment Plant and Campus

Please find below list of RFIs regarding the above referenced project:

1. Detail 3 on Sheet 02S5.2 shows the double tee precast sitting partially on a 12" CMU bond beam with a 6" CMU parapet. However, this does not align with the general design of this wall as shown in Detail 1 on Sheet 02S3.1. I assume that the precast will simply extend past the 12" CMU and connect to the 4" CMU veneer. Am I correct in this assumption or am I overlooking something?



1 **TYP WTP EXTERIOR FDN SECTION AT 12" CMU WALL**
SCALE: 3/4" = 1'-0"

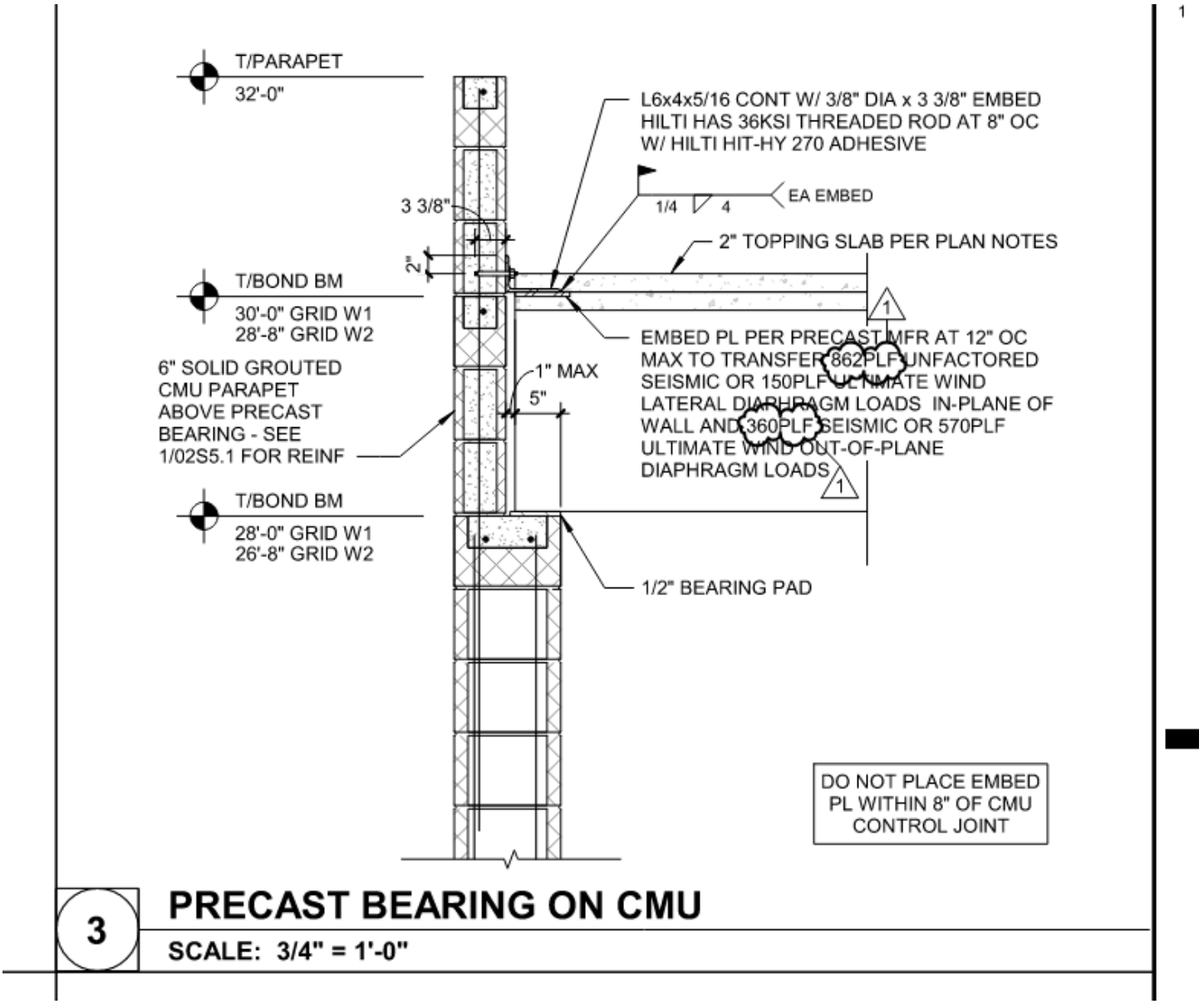
10711 N. State Highway 1
Robinson, IL 62454

DATE:	11/11/2025
DESIGNED:	JWH/AKC
DRAWN:	JWH/AKC
REVIEWED:	PMH

SHEET TITLE:
FOUNDATION DETAILS - WTP

SHEET NUMBER:
02S3.1

PROJECT NO.: 0210007.01



Thanks,

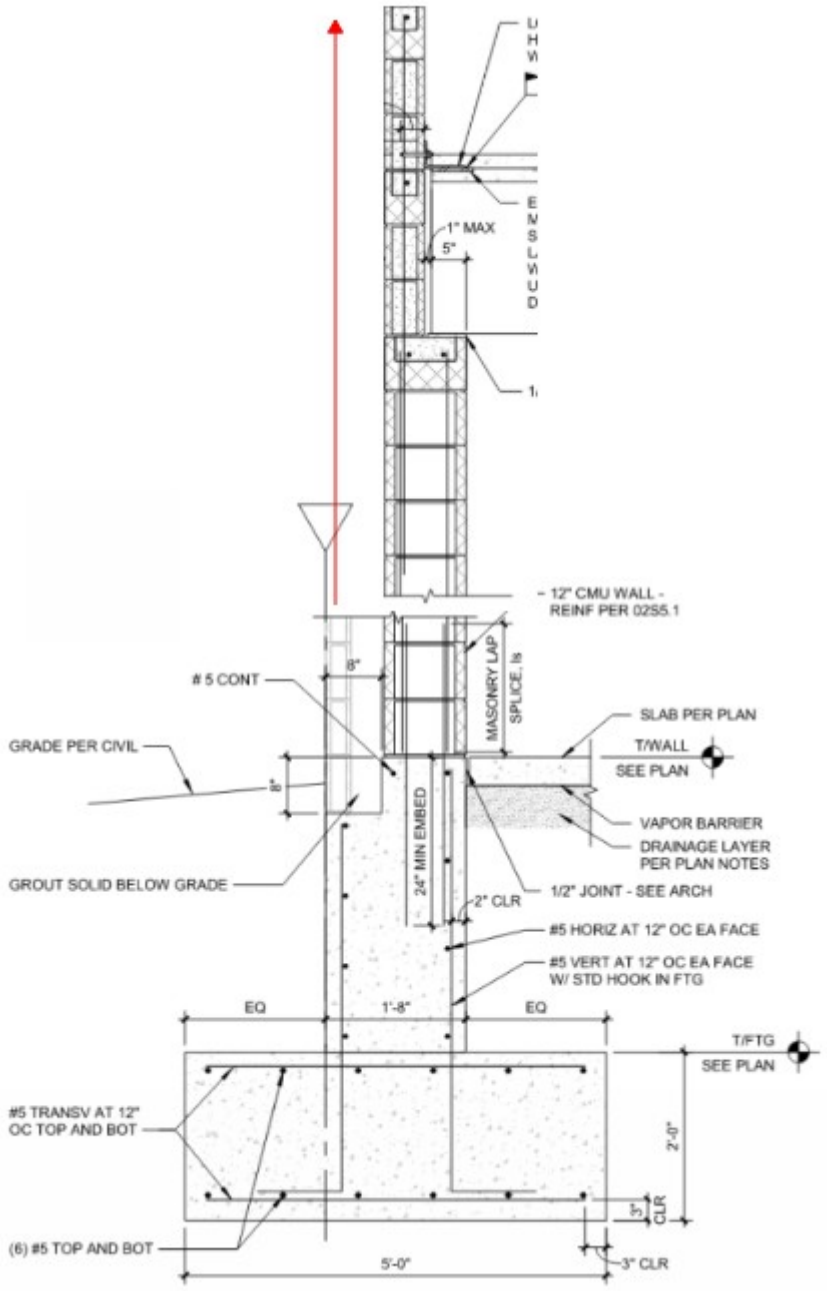
Dirk Bartges
Grunloh Building Inc.

Sanju, Mokammel

From: Coussens, Adrienne
Sent: Wednesday, January 21, 2026 2:02 PM
To: Wagner, Bond
Cc: Sanju, Mokammel; Hanfland, Andy
Subject: RE: Robinson-Palestine - WTP - RFI #2

The precast does not support the veneer. The precast bears on 5” of the 12” (11 5/8”) CMU leaving a 1” gap to the 6” (5 5/8”) masonry – this all adds up 5 + 1 + 5 5/8” = 11 5/8”.
The veneer is to the “left” and has masonry ties to the 12” or 6” per arch building sections.

Stacking the details, it looks like this:



Hopefully that helps clarify.

Adrienne Coussens, PE, SE / Engineering Manager
PE – KS, IA, CO, MI; SE – IL, MA
o / 309.689.9888 c / 913.991.8177
FARNSWORTH GROUP

From: Wagner, Bond <bwagner@F-W.com>
Sent: Wednesday, January 21, 2026 1:55 PM
To: Coussens, Adrienne <acoussens@F-W.com>

Cc: Sanju, Mokammel <ssanju@F-W.com>; Hanfland, Andy <ahanfland@F-W.com>
Subject: RE: Robinson-Palestine - WTP - RFI #2

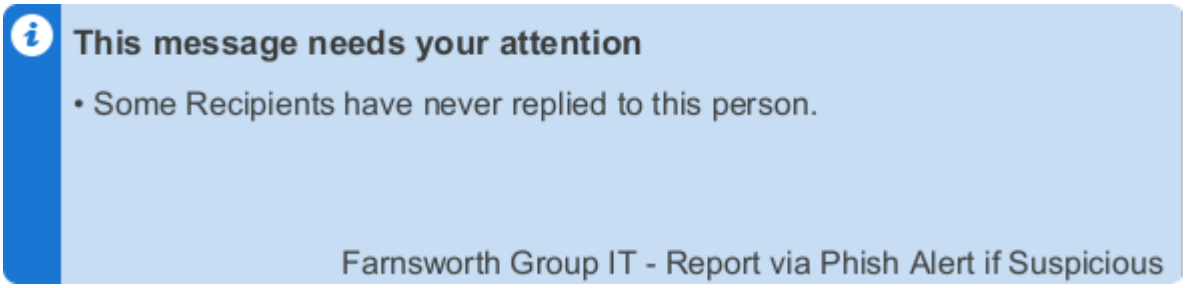
Adding Adrienne to this as it refers to the S Sheets... Thx.

Bond S. Wagner, AIA, NCARB / Architectural Manager
o / 309.689.9888 c / 309.648.9504
FARNSWORTH GROUP

From: Hanfland, Andy <ahanfland@f-w.com>
Sent: Wednesday, January 21, 2026 1:42 PM
To: Wagner, Bond <bwagner@F-W.com>
Cc: Sanju, Mokammel <ssanju@F-W.com>
Subject: FW: Robinson-Palestine - WTP - RFI #2

Andrew C. Hanfland P.E. / **Senior Engineering Manager**
o / 217.531.1253 d / 217.305.7614 c / 217.343.6993
FARNSWORTH GROUP

From: Dirk Bartges <Dirk@grunlohbuilding.com>
Sent: Wednesday, January 21, 2026 1:33 PM
To: Hanfland, Andy <ahanfland@f-w.com>
Cc: Jack Hoene <Jack@grunlohbuilding.com>; Cole <cole@grunlohbuilding.com>
Subject: Robinson-Palestine - WTP - RFI #2



Andy,

Please see RFI #2 for your review.

Thanks,

Dirk Bartges - Project Manager
T 217.342.2221 **| M** 217.259.8250
GRUNLOH
BUILDING, INC.
901 North Second Street • 217.342.2221 • Effingham, Illinois 62401

GRUNLOH
BUILDING, INC.

January 26, 2026

Farnsworth Group

Reference: Robinson-Palestine Water Commission – Water Treatment Plant and Campus

Please find below list of RFIs regarding the above referenced project:

1. The drawings call for 12" thick aggregate surface course and the specs call for a minimum 8". Can you clarify which is required?

A: 8" Thick aggregate is required

2. Will geotextile fabric be required under rip rap?

A: Geotextile will be required under the RR per the IDOT Manual

3. Can spoils remain onsite or will they need to be hauled off?

A: Spoils can remain on site and graded to the owners satisfaction

Thanks,

Dirk Bartges
Grunloh Building Inc.

GRUNLOH
BUILDING, INC.

January 28, 2026

Farnsworth Group

Reference: Robinson-Palestine Water Commission – Water Treatment Plant and Campus

Please find below list of RFIs regarding the above referenced project:

1. There is a note on Sheet C5.3 in Addendum #2 that states that the electrical and control work is to be completed by the Robinson-Palestine Water Commission's electrician. Is this inclusive of all electrical or will the electrical contractor have a portion of the electrical scope? i.e. conduits, pulling wire, relocating cabinets, etc.

ELECTRICAL AND CONTROL WORK WILL BE DONE BY THE ROBINSON PALESTINE WATER COMMISSION"S ELECTRICIAN. THE SCHEMATIC IS SHOWN FOR INFORMATIONAL PURPOSES ONLY. ALL WORK DONE BY CONTRACTOR IS TO BE COORDINATED WITH THE COMMISSION"S ELECTRICIAN.

Remove the note from sheet C5.3. This deletion is included in the addendum #3 also.

Thanks,

Dirk Bartges
Grunloh Building Inc.

901 North Second Street • Effingham, IL 62401 • **p.** 217-342-2221 • BuildwithGrunloh@GrunlohBuilding.com

Sanju, Mokammel

From: Hanfland, Andy
Sent: Wednesday, January 28, 2026 2:04 PM
To: Sanju, Mokammel
Subject: FW: Robinson-Palestine WTP - Geotechnical Inquiry

Andrew C. Hanfland P.E. / **Senior Engineering Manager**
o / 217.531.1253 d / 217.305.7614 c / 217.343.6993
FARNSWORTH GROUP

From: Tristan Hudgens <tristan@holcombengineering.com>
Sent: Wednesday, January 28, 2026 2:01 PM
To: Hanfland, Andy <ahanfland@F-W.com>; Coussens, Adrienne <acoussens@F-W.com>
Subject: Fw: Robinson-Palestine WTP - Geotechnical Inquiry

Andy and Adrienne, I got the message below today. I can respond to Dirk directly but figured you may want to forward my response to all bidding this project. The recommendation based on Dirk's questions:

Can the contractor excavate 15'-17' of soil down to dense glacial till soils then replace the excavated area with borrow soils or dried soil from the tank foundation excavation?

Yes, this is would be acceptable from my standpoint. Contractor should remove approximately 15-17' of upper soils then verify that the soils at 15-17' do in fact meet the required bearing capacity. If the soils meet the required bearing then the excavation may be filled in maximum 8" lifts compacted to 98% of the max dry density from the standard proctor test. The fill soil may be borrow soil or soil from the excavations on site so long as the fill is a low plastic silty clay or sandy clay with a liquid limit of less than 40 and a maximum plasticity index of 20 or CA-6 crushed stone. The excavation below the foundation should extend at least 15' outbound of the foundation to accommodate the zone of influence.

Let me know if you need anything else. Thanks,

Tristan W. Hudgens, P.E.

Holcomb Foundation Engineering Co.
393 Wood Road
Carbondale, Illinois 62901

phone 618-529-5262
fax 618-457-8991

tristan@holcombengineering.com

From: Dirk Bartges <Dirk@grunlohbuilding.com>
Sent: Wednesday, January 28, 2026 11:29 AM
To: Tristan Hudgens <tristan@holcombengineering.com>
Cc: Andrew Grunloh <Andrew@grunlohbuilding.com>
Subject: Robinson-Palestine WTP - Geotechnical Inquiry

Tristan,

My name is Dirk Bartges and I'm a PM / estimator at Grunloh Building out of Effingham, IL. I'm currently working on a bid for the Robinson-Palestine Water Treatment Plant and Campus project, and I had a few questions regarding the geotechnical report that your company provided.

Within the report, it is mentioned that the locations for the new ground storage tanks would require a surcharge to obtain the desired compaction. After review of the bore logs, we are proposing to excavate the poor soils down to a depth of approximately 15' - 17' in order to expose a more desired stratum. This would take place in the immediate area of the tank foundations as well as approximately 15' outbound of the foundations in order to accommodate the zone of influence. We would then replace the removed soils with either soils borrowed from other excavated areas or with the soils removed from the ground storage tank excavations once they have been properly dried. Replacement of the soils would be completed with a maximum of 8" lifts. In your opinion, is this a reasonable approach to this scope of work. Let me know if you have any questions or if you would like to jump on a call to discuss.

Thanks,

Dirk Bartges - Project Manager
T 217.342.2221 **| M** 217.259.8250
GRUNLOH
BUILDING, INC.
901 North Second Street • 217.342.2221 • Effingham, Illinois 62401

Sanju, Mokammel

From: Sanju, Mokammel
Sent: Wednesday, January 28, 2026 2:14 PM
To: Hanfland, Andy
Subject: RE: Robinson-Palestine WTP - GST Foundations

Yes, that is acceptable

Sanju Mokammel / Engineering Associate II
o / 217.352.7408 d / 217.318.5858 c / 217.721.4771

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2211 West Bradley Avenue / Champaign, IL 61821
www.f-w.com

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From: Hanfland, Andy <ahanfland@f-w.com>
Sent: Wednesday, January 28, 2026 2:05 PM
To: Sanju, Mokammel <ssanju@F-W.com>
Subject: FW: Robinson-Palestine WTP - GST Foundations

Andrew C. Hanfland P.E. / **Senior Engineering Manager**
o / 217.531.1253 d / 217.305.7614 c / 217.343.6993
FARNSWORTH GROUP

From: Dirk Bartges <Dirk@grunlohbuilding.com>
Sent: Monday, January 26, 2026 12:52 PM
To: Hanfland, Andy <ahanfland@f-w.com>
Cc: Andrew Grunloh <Andrew@grunlohbuilding.com>; Jack Hoene <Jack@grunlohbuilding.com>; Cole <cole@grunlohbuilding.com>
Subject: Robinson-Palestine WTP - GST Foundations

Andy,

I believe that we have a plan for reaching the required compaction for the ground storage tanks without the need to surcharge the area. Our plan would be to remove the poor soils to a depth of approximately 15' - 17' in order to expose soils of a sufficient compressive strength. We would then replace the poor soils using a combination of soils borrowed from trenching and excavation operations, as well as the removed spoils once adequately dried. I just wanted to bounce this off of you to make sure that this would be acceptable. Additionally, I would like to run this by Tristan and/or Timothy at HFE in order to hear their thoughts, if that is okay with you. Let me know if you have any questions or concerns.

Thanks,

Dirk Bartges - Project Manager
T 217.342.2221 **| M** 217.259.8250
GRUNLOH
BUILDING, INC.
901 North Second Street • 217.342.2221 • Effingham, Illinois 62401

Sanju, Mokammel

From: Hanfland, Andy
Sent: Tuesday, January 20, 2026 9:40 AM
To: Wes Readinger
Cc: Sanju, Mokammel; Shawn Schauber
Subject: RE: Robinson/Palestine WTP RFI

Wes,

Spoils can be deposited on site.

Division C is responsible for items listed in the remaining points

Andrew C. Hanfland P.E. / **Senior Engineering Manager**
o / 217.531.1253 d / 217.305.7614 c / 217.343.6993
FARNSWORTH GROUP

From: Wes Readinger <wreadinger@hannigconstruction.com>
Sent: Thursday, January 15, 2026 2:13 PM
To: Hanfland, Andy <ahanfland@f-w.com>
Cc: Sanju, Mokammel <ssanju@f-w.com>; Shawn Schauber <sschauber@hannigconstruction.com>
Subject: Robinson/Palestine WTP RFI

Andy,

Please see below RFI's regarding the Robinson WTP project.

- Can earthwork spoils remain on site, or will they be requited to be hauled off site?
- Please confirm which bid Division is responsible for the 24" and 16" water lines from the WTP to the Ground Storage Tanks?
- Please confirm which bid Division is responsible for the 6" water line from the WTP to the O&M building?
- Please confirm which bid Division is responsible for the "septic field"?

Thank you

Wes Readinger
wreadinger@hannigconstruction.com
Office: 812-235-6218
Mobile: 812-249-1259

815 Swan Street
Terre Haute, IN
47807

HANNIG
CONSTRUCTION INC

Request for Clarification 2

Water Treatment Plant and Campus

Robinson Palestine Water Commission

Project 0210007.00

Korte & Luitjohan Contractors, Inc.
Hal Klaus
estimating@korteluitjohan.com
1/16/26

RFC #2: Note A on drawing GI5.0 says that the contractor is to procure all furniture. Note K. on drawing 01A1.1 says that furniture is shown for reference only and is not in contract. Please clarify.

Furniture is part of the contract. Please include as such.

Sanju, Mokammel

From: Sutyak, Tim
Sent: Monday, January 19, 2026 2:34 PM
To: Sanju, Mokammel
Cc: Hanfland, Andy
Subject: Re: FW: Robinson Palestine WTP

Kyle

Heat trace will be provided later, EC just needs to provide the circuit for now.

Thanks!

Tim Sutyak, PE, LC / Sr. Engineer
o / 217.352.7408 d / 217.298.9017 c / 217.381.8880

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From: Sutyak, Tim <tsutyak@F-W.com>
Sent: Friday, January 16, 2026 10:41 AM
To: Sanju, Mokammel <ssanju@F-W.com>
Cc: Hanfland, Andy <ahanfland@F-W.com>
Subject: Fw: FW: Robinson Palestine WTP

FYI

Tim Sutyak, PE, LC / Sr. Engineer
o / 217.352.7408 d / 217.298.9017 c / 217.381.8880

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From: Kyle Brumleve <kyle@palselectricinc.com>
Sent: Friday, January 16, 2026 8:55 AM
To: Sutyak, Tim <tsutyak@f-w.com>
Cc: Hanfland, Andy <ahanfland@f-w.com>; Jerod Sarver <jerod@palselectricinc.com>
Subject: Re: FW: Robinson Palestine WTP

Good morning Tim and Andy,

Sheet 2E6.1 Keynotes 1 and 2 call out heat trace on the water sampling line; however, I do not see a corresponding detail or specification.

Could you please clarify the requirements for this heat trace?

Thanks!
Kyle Brumleve

12900 N 1775th RD
Teutopolis, IL 62467
PO Box 662

217-857-3683 - Office
217-857-1882 - Fax

On Thu, Jan 15, 2026 at 10:48 AM Sutyak, Tim <tsutyak@f-w.com> wrote:

Kyle

NETA testing will be required per the specifications. See the specifications for more details.

Tim Sutyak, PE, LC / Sr. Engineer
o / 217.352.7408 d / 217.298.9017 c / 217.381.8880

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From: Kyle Brumleve <kyle@palselectricinc.com>
Sent: Thursday, January 15, 2026 8:40 AM
To: Hanfland, Andy <ahanfland@f-w.com>
Cc: Jerod Sarver <jerod@palselectricinc.com>; Sutyak, Tim <tsutyak@f-w.com>
Subject: Re: FW: Robinson Palestine WTP

Andy & Tim,

Looking through the specs on this project, could you provide a detailed list of any NETA testing that will be required from a third party NETA contractor on this project?

Thanks!
Kyle Brumleve

12900 N 1775th RD
Teutopolis, IL 62467
PO Box 662
217-994-6906 - Cell
217-857-3683 - Office
217-857-1882 - Fax

On Tue, Dec 9, 2025 at 4:02 PM Kyle Brumleve <kyle@palselectricinc.com> wrote:

> We certainly appreciate the quick response. Thanks gentlemen!
>
> Thanks!
> Kyle Brumleve

12900 N 1775th RD
Teutopolis, IL 62467
PO Box 662
217-994-6906 - Cell
217-857-3683 - Office
217-857-1882 - Fax

On Tue, Dec 9, 2025 at 3:57 PM Hanfland, Andy <ahanfland@f-w.com> wrote:

> I don't approve without full submittals and I don't review submittals until after the bid, but from what you have indicated it looks like it hits the high points.
>
> I don't like being non-committal but if I start reviewing everyone's alternatives, that is all that I would do until the bid opening date.

Andrew C. Hanfland P.E. / Senior Engineering Manager
o / 217.531.1253 d / 217.305.7614 c / 217.343.6993
FARNSWORTH GROUP

From: Sutyak, Tim <tsutyak@F-W.com>
Sent: Tuesday, December 9, 2025 3:37 PM
To: Hanfland, Andy <ahanfland@f-w.com>
Subject: Re: Robinson Palestine WTP

Sounds like that can meet the BABA requirements, as long as service tech is within 4hrs I am ok.

Tim Sutyak, PE, LC / Sr. Engineer
o / 217.352.7408 d / 217.298.9017 c / 217.381.8880

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From: Hanfland, Andy <ahanfland@f-w.com>
Sent: Tuesday, December 9, 2025 3:25 PM
To: Sutyak, Tim <tsutyak@F-W.com>
Subject: FW: Robinson Palestine WTP

Thoughts?

Andrew C. Hanfland P.E. / Senior Engineering Manager
o / 217.531.1253 d / 217.305.7614 c / 217.343.6993
FARNSWORTH GROUP

From: Jerod Sarver <jerod@palselectricinc.com>
Sent: Tuesday, December 9, 2025 2:08 PM
To: Hanfland, Andy <ahanfland@f-w.com>
Cc: Kyle Brumleve <kyle@palselectricinc.com>
Subject: Re: Robinson Palestine WTP

Andy,

These units are manufactured in North Mankato, MN.

This particular size of generator is available with a Volvo or Perkins Engine - John Deere Industrial is also possible upon request.

The generator ends are either Marathon or Stamford (EU) - Depending on requirements.

Fuel Tank and Housing are made locally (I believe housing in Northern Illinois) and Fuel Tanks in Minnesota.

Controls are all identical to Cummins/Cat - Deep Sea Electronics - All (3) manufacturers pay for Private Label Manufacturing and install the same Deep Sea Electronics boards - Cat and Cummins will lock the boards out forcing Cat/Cummins repairs while Bluestar leaves the boards unlocked; preventing specific contractor controlled repairs in the future.

If you are interested; I can have engineering from Bluestar reach out to you. We are a servicing dealer for Bluestar and have (3) generator technicians on staff.

Bluestar and Cat will provide an ASCO transfer switch - Cat likely Re-Branded (depending on which Cat dealer provides the quote) - Cummins will either provide a Cummins proprietary transfer switch or a re-branded ASCO switch.

Thanks!
Jerod Sarver

12900 N 1775th Rd
Teutopolis , IL 62467
PO Box 662
217-663-0767 - Cell
217-857-3683 - Phone
217-857-1882 - Fax

jerod@palselectricinc.com
www.palselectricinc.com

On Tue, Dec 9, 2025 at 2:00 PM Hanfland, Andy <ahanfland@f-w.com> wrote:

> Kylie,
>
> Before we go down that road are the units American Made?
>
> Andy
>
> **Andrew C. Hanfland P.E.** / Senior Engineering Manager
> o / 217.531.1253 d / 217.305.7614 c / 217.343.6993
> **FARNSWORTH GROUP**
>
> ---
>
> **From:** Kyle Brumleve <kyle@palselectricinc.com>
> **Sent:** Tuesday, December 9, 2025 11:30 AM
> **To:** Hanfland, Andy <ahanfland@f-w.com>
> **Cc:** Jerod Sarver <jerod@palselectricinc.com>
> **Subject:** Robinson Palestine WTP
>
> Morning Andrew,
>
> I wanted to reach out with the first of what will probably be many questions on this project. Would you be willing to accept Bluestar as an alternative for a generator manufacturer?
>
> Thanks!
> Kyle Brumleve

12900 N 1775th RD
Teutopolis, IL 62467
PO Box 662
217-994-6906 - Cell
217-857-3683 - Office
217-857-1882 - Fax

WOHLTMAN CONSTRUCTION, INC.

Robinson Palestine Water Treatment Plant and Campus
0210007.00

Attn: Andrew Hanfland/Bond Wagner

RFI Log…

01/07/26

1. Please elaborate on what we are to paint in Storage Area 100 (01I1.1)
    a. There is a P4 designations at this area with General Notes to paint all exposed structure, exposed ductwork, piping, conduits, etc…
        i. Are we painting the entire structure??
            1. All exposed Structural Beams at Storage Area 100??
                a. Ceiling and walls both have metal liner panel…(01A5.1)
        ii. Please confirm if you are expecting all exposed MEP piping to be painted in this area…

        All exposed areas shall be painted. Areas covered by liner panels, do not require painting.
2. Please elaborate on Painting required in Process Rooms 205 and 206 (02I1.1)
    a. There are P4 and P1 designations at these areas with General Notes to paint all exposed structure, ductwork, piping, conduits, etc…
        i. Are we to paint Process Piping??

        Yes
    b. Are we painting concrete deck/ceiling??

    Yes, please see spec 09 96 00.

3. Will RR permits be needed to complete work in-between IL 33 and the RR??

    Yes, we will need a Railroad permit, which will be issued as we receive it from the Railroad company.

PO Box 1607, Effingham, IL 62401 Phone (217) 844-6963; Fax (217) 844-6965

Robinson Palestine Water Treatment Plant and Campus
0210007.00

Attn: Andrew Hanfland/Bond Wagner

RFI Log…

1/14/25

4. Are we able to keep all spoils on site?? Create a berm on site??
    a. Top Soil
    b. Spoils from footings and trenching

A: Spoils can be deposited on site for a reasonable amount of time, but no later than until the completion of the project.

5. Is the sanitary sewer site piping apart of DIV A or DIV C?

A: Division C

1/19/26

Substitution Request Div 28:

6. Access Control substitution: is DMP an acceptable manufacturer?

7. Camera Substitution: is Turing an acceptable manufacturer?

All substitution requests will be looked into for approval or rejection after the bid has been awarded.

Division 3 Precast Double T design:

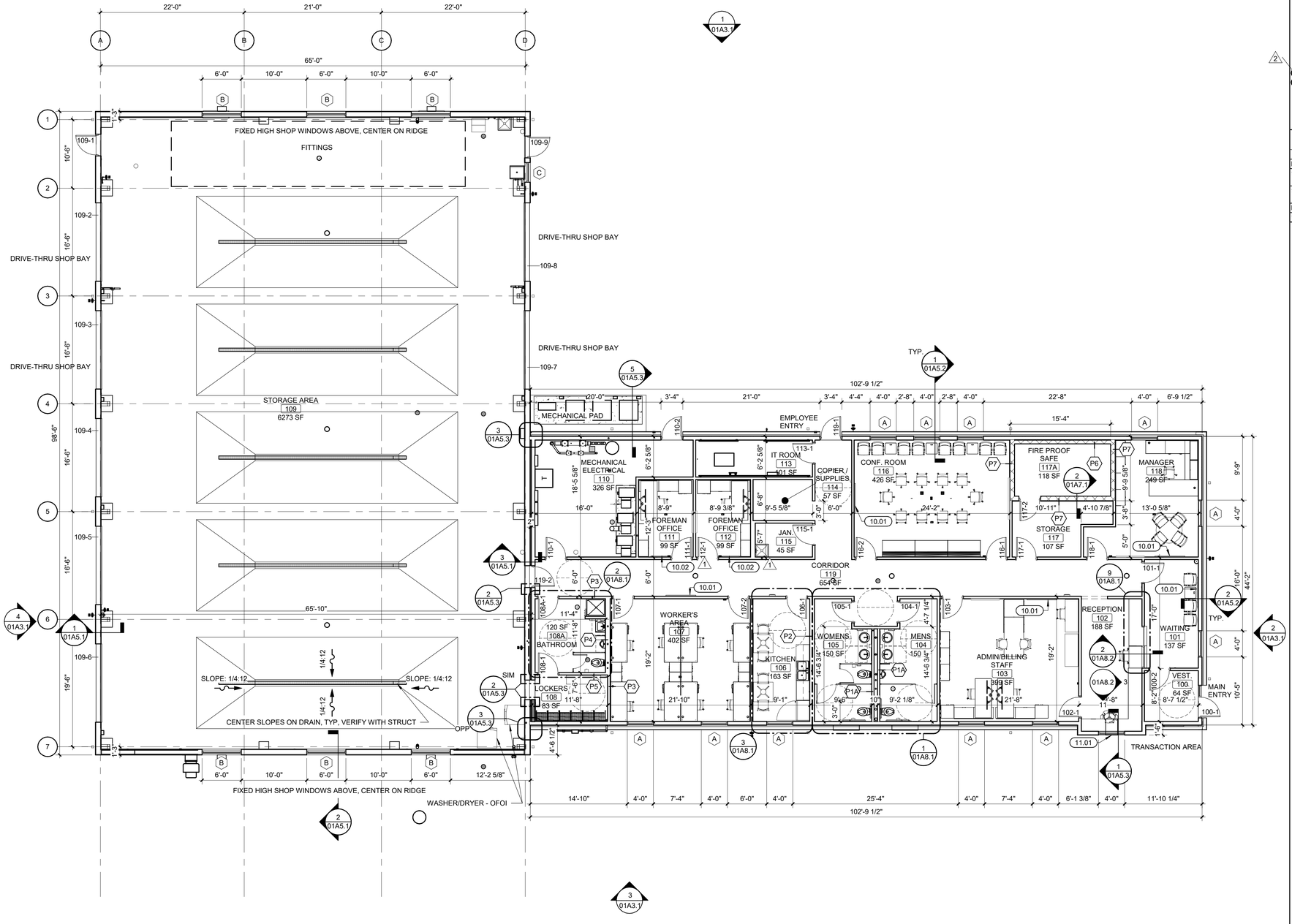
8. *See attached for Doubt T design from Midwest Precast. Is this design acceptable?

All equivalent substitution request will be reviewed after the bid has been awarded.

Septic Tank Specifications

9. Do we know the number of people that will be at the facility during normal working hours?

A: Five individuals on average.



FIRST FLOOR PLAN

SCALE: 1/8" = 1'-0"

0 4 8 16

PLAN (NORTH)

PLAN GENERAL NOTES

A. FINISHED FLOOR (FF) ELEVATION = 481.50

B. REFER TO LIFE SAFETY AND PARTITIONS FOR LOCATION OF RATED PARTITIONS, SEPARATION INFORMATION, AND PARTITION TYPES. ALL INTERIOR PARTITIONS ARE TYPE P8 UNLESS OTHERWISE NOTED OR SHOWN.

C. ALL DIMENSIONS ARE TO FACE OF STUD, CMU AND/OR CONCRETE UNLESS NOTED OTHERWISE.

D. ALL WOOD IN CONTACT WITH CONCRETE SHALL BE PRESSURE TREATED.

E. ALL NEW WORK SHALL BE PLUMB TRUE, AND LEVEL UNLESS OTHERWISE NOTED.

F. EXTEND FIRE RESISTANT CONSTRUCTION TO STRUCTURE ABOVE. EXTEND PARTITIONS AROUND EQUIPMENT, CABINETS, AND OTHER ITEMS THAT PENETRATE THESE PARTITIONS AND FILL VOIDS IN PARTITIONS ABOVE CEILING TO MAINTAIN DESIGNATED FIRE RESISTANCE. SEE LIFE SAFETY SHEET(S) FOR FURTHER FIRE AND SMOKE RESISTANCE INFORMATION.

G. DISSIMILAR FLOOR MATERIALS SHALL MEET UNDER CENTER OF DOOR LEAF

H. REFER TO STRUCTURAL DRAWINGS FOR FRAMING INFORMATION AND FRAMING DIMENSIONS.

I. ALL APPLIANCES ARE TO BE PROVIDED AND INSTALLED BY GENERAL CONTRACTOR, UNLESS OTHERWISE NOTED OR SHOWN.

J. VERIFY ALL APPLIANCE DIMENSIONS PRIOR TO FINAL MILLWORK CONSTRUCTION.

K. CONTRACTOR TO PROCURE ALL FURNITURE. SEE GI5.0 FOR FURNITURE INFORMATION.

L. CONTROL JOINTS OF 4" CMU SHALL BE SPACED AT 7'-4" MAXIMUM O.C. AND NO MORE THAN 4'-0" AT CORNERS.

M. COORDINATE SLOPED FLOOR AT TRENCH DRAINS WITH STRUCTURAL.

KEYNOTES (BY DIVISION)

Mark	Description
DIVISION 10	
10.01	WALL MOUNTED TELEVISION; BASIS OF DESIGN: SAMSUNG 55" CLASS, U7900 SERIES, OR APPROVED EQUAL
10.02	WALL MOUNTED TELEVISION; BASIS OF DESIGN: SAMSUNG 32" CLASS, H5000F SERIES, OR APPROVED EQUAL
DIVISION 11	
11.01	DRIVE UP WINDOW AND EQUIPMENT

Farnsworth GROUP

400 W. JEFFERSON, SUITE A
EFFINGHAM, ILLINOIS 62401
(217) 342-5668 / info@f-w.com

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ISSUE:

#	DATE:	DESCRIPTION:
1	01/09/2026	ADD 02
2	01/23/2026	ADD 03

BID SET
NOT FOR CONSTRUCTION

PROJECT:

Robinson-Palestine Water Commission

Water Treatment Plant and Campus

10711 N. State Highway 1,
Robinson, IL 62454

DATE:	11/14/2025
DESIGNED:	BSW
DRAWN:	DWB/LCH
REVIEWED:	BSW

SHEET TITLE:

FLOOR PLAN - O/M

SHEET NUMBER:

01A1.1

PROJECT NO.: 0210007.00

12/2/2026 4:16:09 PM

KEYNOTES (BY DIVISION)

Mark	Description
DIVISION 10	
10.01	WALL MOUNTED TELEVISION; BASIS OF DESIGN: SAMSUNG 55" CLASS, U7900 SERIES, OR APPROVED EQUAL

PLAN GENERAL NOTES

2

A. FINISHED FLOOR (FF) ELEVATION = 481.50

B. REFER TO LIFE SAFETY AND PARTITIONS FOR LOCATION OF RATED PARTITIONS, SEPARATION INFORMATION, AND PARTITION TYPES. ALL INTERIOR PARTITIONS ARE TYPE P8 UNLESS OTHERWISE NOTED OR SHOWN.

C. ALL DIMENSIONS ARE TO FACE OF STUD, CMU AND/OR CONCRETE UNLESS NOTED OTHERWISE.

D. ALL WOOD IN CONTACT WITH CONCRETE SHALL BE PRESSURE TREATED.

E. ALL NEW WORK SHALL BE PLUMB TRUE, AND LEVEL UNLESS OTHERWISE NOTED.

F. EXTEND FIRE RESISTANT CONSTRUCTION TO STRUCTURE ABOVE. EXTEND PARTITIONS AROUND EQUIPMENT, CABINETS, AND OTHER ITEMS THAT PENETRATE THESE PARTITIONS AND FILL VOIDS IN PARTITIONS ABOVE CEILING TO MAINTAIN DESIGNATED FIRE RESISTANCE. SEE LIFE SAFETY SHEET(S) FOR FURTHER FIRE AND SMOKE RESISTANCE INFORMATION.

G. DISSIMILAR FLOOR MATERIALS SHALL MEET UNDER CENTER OF DOOR LEAF

H. REFER TO STRUCTURAL DRAWINGS FOR FRAMING INFORMATION AND FRAMING DIMENSIONS.

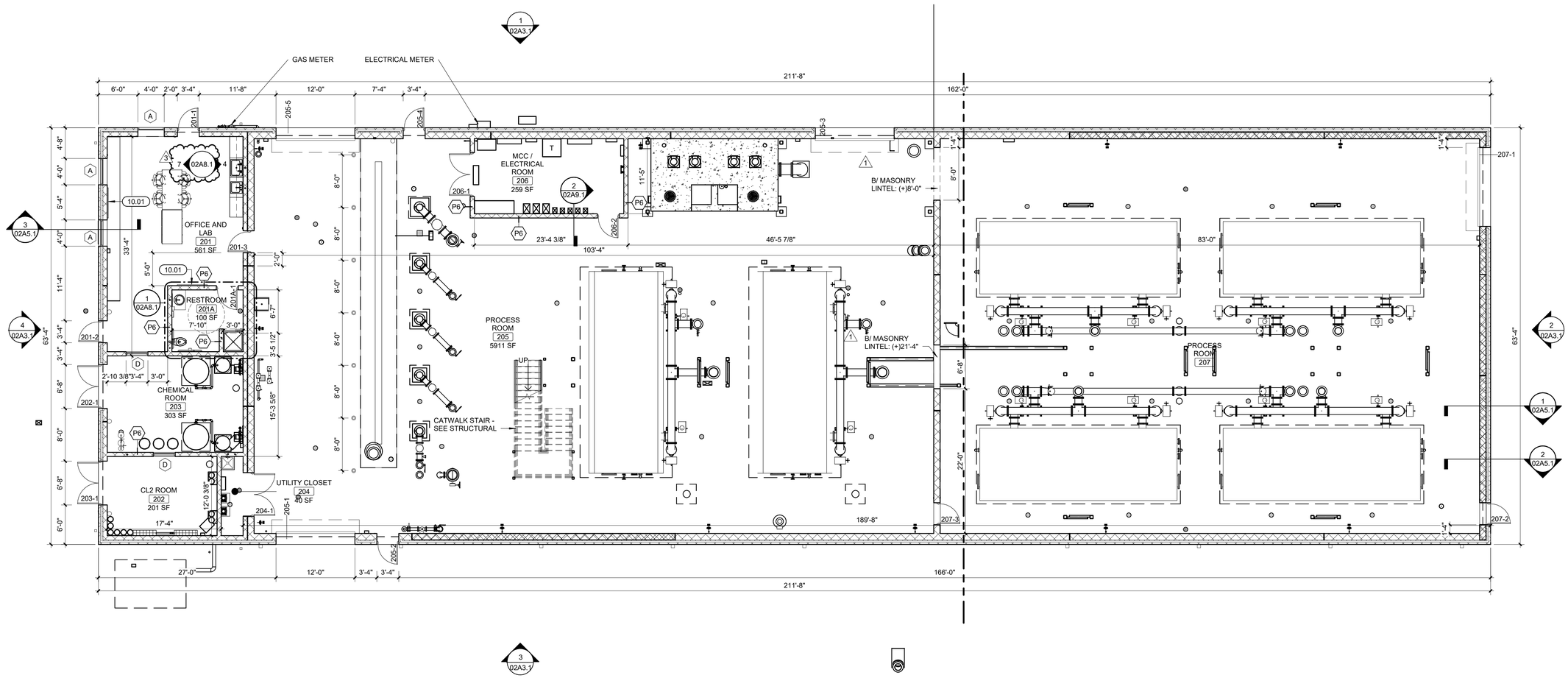
I. ALL APPLIANCES ARE TO BE PROVIDED AND INSTALLED BY GENERAL CONTRACTOR, UNLESS OTHERWISE NOTED OR SHOWN.

J. VERIFY ALL APPLIANCE DIMENSIONS PRIOR TO FINAL MILLWORK CONSTRUCTION.

K. CONTRACTOR TO PROCURE ALL FURNITURE. SEE GI5.0 FOR FURNITURE INFORMATION.

L. CONTROL JOINTS OF 4" CMU SHALL BE SPACED AT 7'-4" MAXIMUM O.C. AND NO MORE THAN 4'-0" AT CORNERS.

M. COORDINATE SLOPED FLOOR AT TRENCH DRAINS WITH STRUCTURAL.



1 FIRST FLOOR PLAN
SCALE: 1/8" = 1'-0"

0 4 8 16

PLAN NORTH

Farnsworth GROUP
400 W. JEFFERSON, SUITE A
EFFINGHAM, ILLINOIS 62401
(217) 342-5668 / info@f-w.com
www.f-w.com
Engineers | Architects | Surveyors | Scientists

ISSUE:

#	DATE:	DESCRIPTION:
1	12/17/2025	ADD 01
2	01/09/2026	ADD 02
3	01/23/2026	ADD 03

BID SET
NOT FOR CONSTRUCTION

PROJECT:
Robinson-Palestine Water Commission

Water Treatment Plant and Campus

10711 N. State Highway 1,
Robinson, IL 62454

DATE:	11/14/2025
DESIGNED:	BSW
DRAWN:	LCH
REVIEWED:	BSW

SHEET TITLE:
FLOOR PLAN - WTP

SHEET NUMBER:
02A1.1

PROJECT NO.: 0210007.00

12/2/2026 4:16:13 PM

INTERIOR ELEVATION GENERAL NOTES

A. SEE G0.1 FOR STANDARD MOUNTING HEIGHTS.

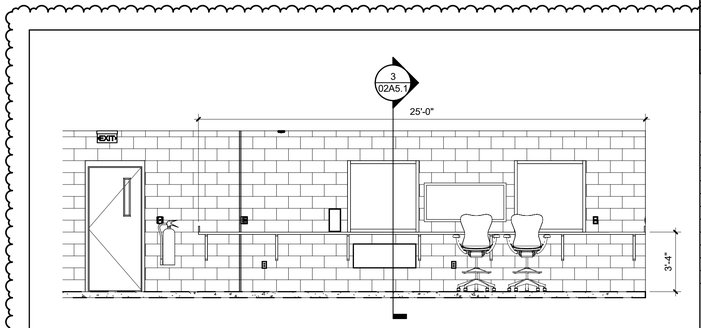
B. CONTROL JOINTS SHOWN ARE DESIGNATED FOR AESTHETIC PURPOSES. WHERE CONTROL JOINTS ARE NOT SHOWN, COMPLY WITH REQUIREMENTS AS DICTATED IN THE PARTITION GENERAL NOTES.

CASEWORK SCHEDULE

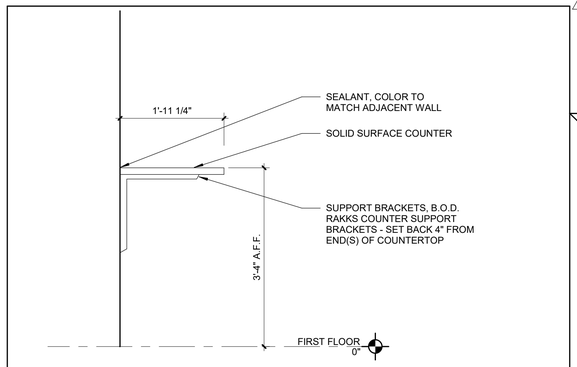
NO.	WIDTH	HEIGHT	DEPTH	DETAIL NO.	DESCRIPTION
BASE CABINETS					
B1	3' - 0"	2' - 8 1/2"	2' - 0"		ONE LARGE 6" DRAWER, TWO HINGED DOORS, ONE ADJUSTABLE SHELF (LABORATORY GRADE)
B4	3' - 3"	2' - 8 1/2"	2' - 0"		ONE LARGE 6" DRAWER, TWO HINGED DOORS, ONE ADJUSTABLE SHELF (LABORATORY GRADE)
B5	3' - 0"	2' - 8 1/2"	2' - 0"		SINK CABINET, TWO HINGED DOORS, 6" FALSE FRONT ABOVE DOORS (LABORATORY GRADE)
WALL CABINETS					
W1	3' - 0"	2' - 6"	1' - 0"		TWO HINGED DOORS, TWO ADJUSTABLE SHELVES (LABORATORY GRADE)
W3	3' - 0"	1' - 6"	1' - 0"		TWO HINGED DOORS, TWO ADJUSTABLE SHELVES (LABORATORY GRADE)
W4	3' - 3"	2' - 6"	1' - 0"		TWO HINGED DOORS, TWO ADJUSTABLE SHELVES (LABORATORY GRADE)

TOILET ACCESSORY SCHEDULE

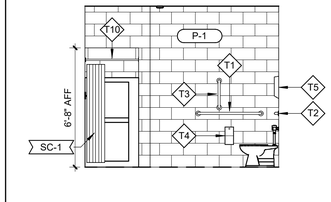
MARK	DESCRIPTION	REMARKS
T1	GRAB BAR (42")	CFCI
T2	GRAB BAR (36")	CFCI
T3	GRAB BAR (18")	CFCI
T4	TOILET PAPER DISPENSER	CFCI
T5	PAPER TOWEL DISPENSER	CFCI
T6	LIQUID SOAP DISPENSER	CFCI
T7	FRAMED MIRROR	CFCI
T8	SANITARY NAPKIN DISPOSAL	CFCI
T10	SHOWER ROD AND CURTAIN	



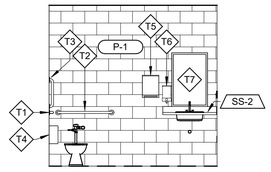
7 OFFICE/LAB ELEVATION - PLAN WEST
SCALE: 1/4" = 1'-0"



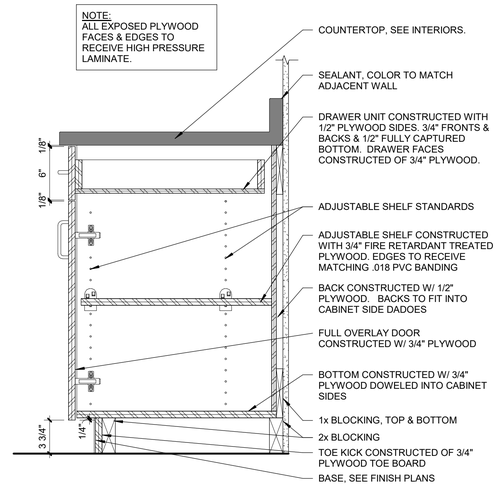
6 COUNTERTOP SUPPORT DETAIL
SCALE: 3/4" = 1'-0"



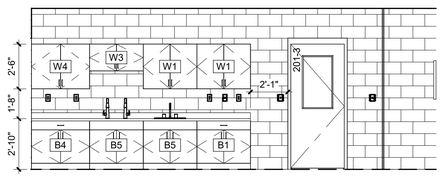
3 RESTROOM ELEVATION - SOUTH
SCALE: 1/4" = 1'-0"



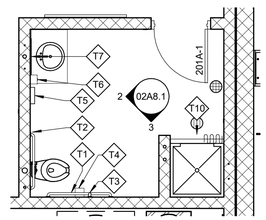
2 RESTROOM ELEVATION - WEST
SCALE: 1/4" = 1'-0"



5 BASE CABINET W/ ONE DRAWER & SHELF
SCALE: 1 1/2" = 1'-0"



4 OFFICE/LAB ELEVATION
SCALE: 1/4" = 1'-0"



1 ENLARGED RESTROOM PLAN
SCALE: 1/4" = 1'-0"

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ISSUE:

#	DATE:	DESCRIPTION:
1	12/17/2025	ADD 01
2	01/09/2026	ADD 02
3	01/23/2026	ADD 03

BID SET
NOT FOR CONSTRUCTION

PROJECT:
Robinson-Palestine Water Commission

Water Treatment Plant and Campus

10711 N. State Highway 1,
Robinson, IL 62454

DATE:	11/14/2025
DESIGNED:	BSW
DRAWN:	LCH
REVIEWED:	BSW

SHEET TITLE:
INTERIOR ELEVATIONS, ENLARGED PLANS, AND WINDOW DETAILS

SHEET NUMBER:
02A8.1

PROJECT NO.: 0210007.00

1/23/2026 4:16:16 PM

FURNITURE SCHEDULE BY PHASE / BUILDING / ROOM

TAG	MANUFACTURER	DESCRIPTION	OVERALL SIZE	QTY	METAL / WOOD FINISH	SEAT / BACK FINISH	NOTES
B1	BASIS OF DESIGN: GROUPE LACASSE	HIP HOP BENCH ; LOW BACK ; SLED BASE	60"W X 30"D X 31 1/4"H	3	BLACK METAL LEGS	GRADE 1 FABRIC - PUNCH CARD - CP10	
B2	BASIS OF DESIGN: SCRANTON PRODUCTS	TUFFTEC LOCKER ROOM BENCH	63"W X 9.5"D X 17 1/4"H	1	BLACK METAL LEGS	BLACK SOLID PLASTIC SEAT	
CH1	BASIS OF DESIGN: GROUPE LACASSE	UPSWING TASK CHAIR; WITH ARMS; UPHOLSTERED SEATS AND MESH BACK	26"W X 26-28"D X 39 42 1/2"H	25	BLACK FRAME, BLACK ARMS	BLACK MESH; GRADE 1 FABRIC - PUNCH CARD - CP04	CASTERS TO COORDINATE WITH FLOORING MATERIAL PER INSTALLATION LOCATION
CH2	BASIS OF DESIGN: GROUPE LACASSE	SHIFTER GUEST / STACKING CHAIR; WITH ARMS; GLIDES; UPHOLSTERED SEATS WITH MESH BACK	22 1/4"W X 22 1/4"D X 33" H	15	BLACK METAL LEGS, BLACK ARMS	BLACK MESH; GRADE 1 FABRIC - PUNCH CARD - CP03	
CH3	BASIS OF DESIGN: GROUPE LACASSE	UPSWING STOOL; WITH ARMS; UPHOLSTERED SEATS AND MESH BACK	26"W X 26-28"D X 44 3/4 - 52 1/4"H	5	BLACK FRAME, BLACK ARMS	BLACK MESH; GRADE 1 FABRIC - PUNCH CARD - CP04	CASTERS TO COORDINATE WITH FLOORING MATERIAL PER INSTALLATION LOCATION
CH4	BASIS OF DESIGN: GROUPE LACASSE	SHIFTER CAFE HEIGHT STOOLS; ARMLESS; UPHOLSTERED SEAT AND MESH BACK	19 3/4"W X 23"D X 45"H	2	BLACK METAL LEGS, BLACK ARMS	BLACK MESH; GRADE 1 FABRIC - PUNCH CARD - CP03	
CH5	BASIS OF DESIGN: GROUPE LACASSE	4800 POLYPROPYLENE BACK AND SEAT GUEST / STACK CHAIRS; WITH ARMS; SLED BASE	22"W X 22 1/2"D X 31"H	4	BLACK METAL LEGS, BLACK ARMS	FS14 GREY POLYPROPYLENE	
D1	BASIS OF DESIGN: GROUPE LACASSE	CONCEPT 400E ; STATIONARY U-SHAPED DESK W OVERHEAD STORAGE AND UNDERCOUNTER STORAGE	96"W X 102"D X 29 1/2"H	1	BLACK METAL HARDWARE, TOM- TOTEM PLASTIC LAMINATE	-	
D2	BASIS OF DESIGN: GROUPE LACASSE	CONCEPT 400E; SIT TO STAND WORKSURFACE L-SHAPE WITH MOBILE PEDESTAL AND TALL WARDROBE STORAGE	93"W X 72"D X 29 1/2" H	2	BLACK METAL HARDWARE, TOM- TOTEM PLASTIC LAMINATE	-	
D3	BASIS OF DESIGN: GROUPE LACASSE	CONCEPT 400E ; STATIONARY L-SHAPED WITH MOBILE PEDESTAL AND TALL WARDROBE STORAGE	93"W X 72"D X 29 1/2" H	2	BLACK METAL HARDWARE, TOM- TOTEM PLASTIC LAMINATE	-	
D4	BASIS OF DESIGN: GROUPE LACASSE	CONCEPT 400E ; STATIONARY RECTANGLE DESK WITH MOBILE PEDESTAL AND TALL WARDROBE STORAGE	72"W X 30"D X 29 1/2"H	8	BLACK METAL HARDWARE, TOM- TOTEM PLASTIC LAMINATE	-	
D5	BASIS OF DESIGN: GROUPE LACASSE	CONCEPT 400E ; STATIONARY RECTANGLE DESK WITH MOBILE PEDESTAL	60"W X 24"D X 29 1/2"H	1	BLACK METAL HARDWARE, TOM- TOTEM PLASTIC LAMINATE	-	
ST1	BASIS OF DESIGN: GROUPE LACASSE	METAL STORAGE FURNITURE ; TALL DOUBLE DOOR STORAGE CABINET WITH ADJUSTABLE SHELVES	30"W X 18"D X 77 5/8"H	11	BLACK	-	
T1	BASIS OF DESIGN: GROUPE LACASSE	QUORUM MULTICONFERENCE ; SQUARE SIDE TABLE	20"W X 20" D 20"H	4	BLACK METAL HARDWARE, TOM- TOTEM PLASTIC LAMINATE	-	
T2	BASIS OF DESIGN: GROUPE LACASSE	QUORUM MULTICONFERENCE ; ROUND 4 PERSON MEETING TABLE	48" DIA	1	BLACK METAL HARDWARE, TOM- TOTEM PLASTIC LAMINATE	-	
T3	BASIS OF DESIGN: GROUPE LACASSE	HIGHTOP STORAGE AND WORKSURFACE ISLAND	104"W X 36"D x 42"H	1	BLACK METAL HARDWARE, TOM- TOTEM PLASTIC LAMINATE	-	
T4	BASIS OF DESIGN: GROUPE LACASSE	RECTANGLE TABLE ON CASTERS	60"W X 24"D X 28"H	1	BLACK METAL HARDWARE, TOM- TOTEM PLASTIC LAMINATE	-	
T5	BASIS OF DESIGN: GROUPE LACASSE	QUORUM MULTICONFERENCE ; SQUARE CAFE TABLE ; PEDESTAL BASE	36"W X 36"D X 28"H	2	BLACK METAL HARDWARE, BOR- BOREALIS PLASTIC LAMINATE	-	
T6	BASIS OF DESIGN: GROUPE LACASSE	HIGHTOP STORAGE AND WORKSURFACE ISLAND WITH SOLID SURFACE TOP	132"W X 36"D X 42"H	1	BLACK METAL WITH SOLID SURFACE TOP	-	

0 4 8 16

PLAN NORTH

FURNITURE PLAN GENERAL NOTES

A. CONTRACTOR TO PROCURE ALL FURNITURE.

B. INSTALL SYSTEMS FURNITURE TO COORDINATE WITH POWER/DATA LOCATIONS.

C. ALL SYSTEMS FURNITURE SHALL BE COMPLIANT WITH THE PROJECT'S SEISMIC REQUIREMENTS

D. REFER TO EQUIPMENT DRAWINGS FOR ADDITIONAL EQUIPMENT SPECIFIC INFORMATION.

E. REFER TO INTERIOR FINISH DRAWINGS FOR ADDITIONAL INTERIOR FINISH SPECIFIC INFORMATION.

F. **FURNITURE REPRESENTATIVE CONTACT INFORMATION:**
DISTRIBUTOR- SHERIDAN CONTRACT
KEVIN SHERIDAN
773-550-9697
KEVIN@SHERIDANCONTRACT.COM

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400 W. JEFFERSON, SUITE A
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Engineers | Architects | Surveyors | Scientists

ISSUE:

#	DATE:	DESCRIPTION:
1	01/23/2026	ADD 03

BID SET
NOT FOR CONSTRUCTION

PROJECT:
Robinson-Palestine Water Commission

Water Treatment Plant and Campus

10711 N. State Highway 1,
Robinson, IL 62454

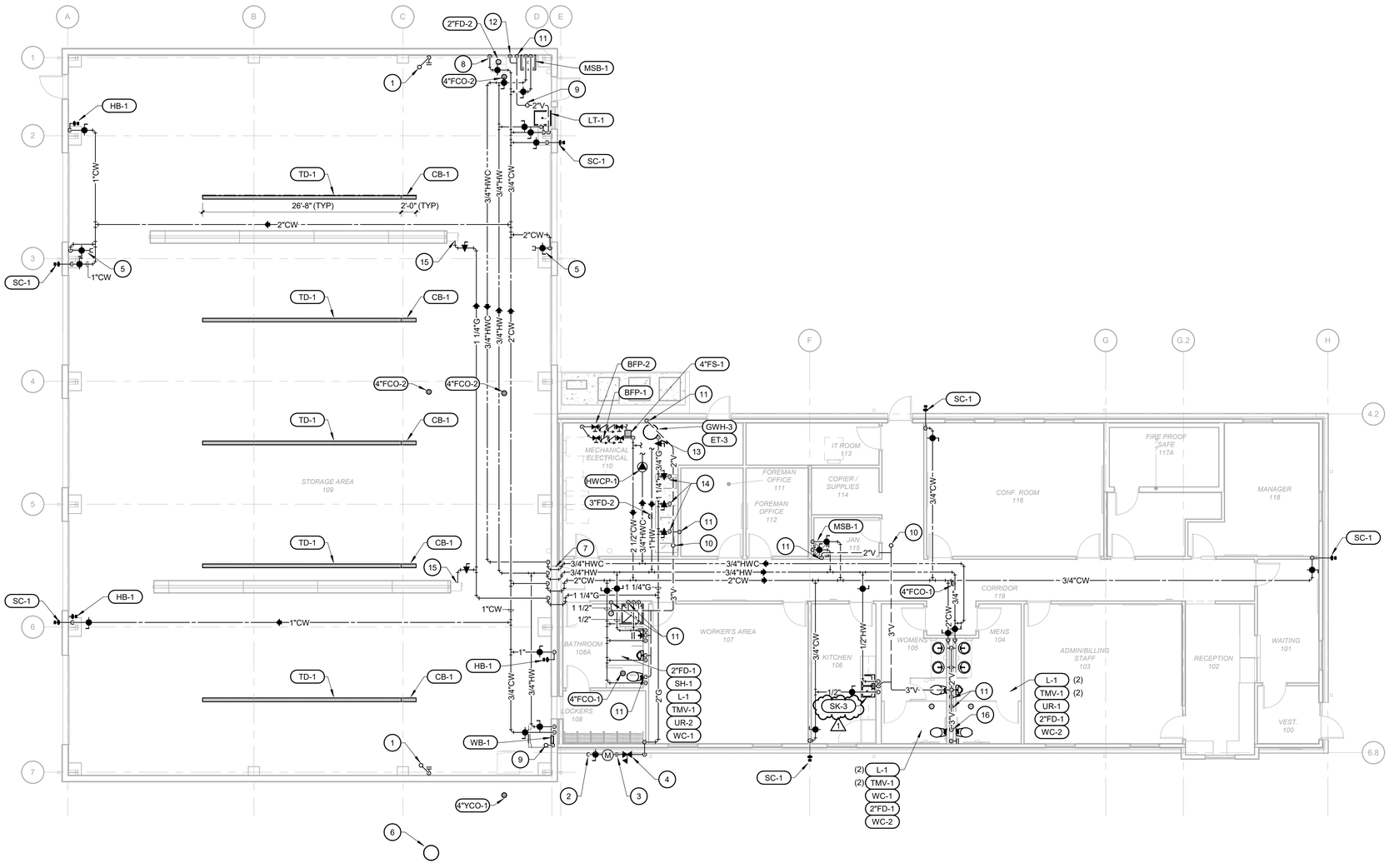
DATE:	11/14/2025
DESIGNED:	MAC
DRAWN:	MAC
REVIEWED:	BSW

SHEET TITLE:
FURNITURE SCHEDULES

SHEET NUMBER:
GI5.0

PROJECT NO.: 0210007.00

1/20/2026 4:16:16 PM



1 FIRST FLOOR PLUMBING PLAN

SCALE: 1/8" = 1'-0"

0 4 8 16

TRUE NORTH

KEYNOTES (#)

1 4" OIL VENT THROUGH ROOF.

2 2 PSI NATURAL GAS SERVICE AND METER BY UTILITY COMPANY (1,855 CFH TOTAL PROJECTED LOAD).

3 2 1/2" NATURAL GAS AT 2 PSI DOWN.

4 PRESSURE REGULATING VALVE TO REDUCE GAS PRESSURE TO 11 INCHES WATER COLUMN.

5 2"CW WITH BALL VALVE AT 48" ABOVE FLOOR. PROVIDE WITH A VACUUM BREAKER AND A 2" CAM AND GROOVE CONNECTION. COORDINATE EXACT CONNECTION WITH OWNER.

6 MANWAY ACCESS FOR UNDERGROUND OIL WASTE STORAGE TANK.

7 OFFSET PIPING FOR BUILDING EXPANSION JOINT.

8 ICE MACHINE BY OTHERS. PC TO MAKE FINAL WATER CONNECTIONS THROUGH A DUAL CHECK VALVE (BFP-3) AND WASTE CONNECTION ROUTED TO FLOOR DRAIN.

9 3" VENT THROUGH ROOF.

10 4" VENT THROUGH ROOF.

11 2" VENT DOWN.

12 1 1/2" VENT DOWN.

13 NATURAL GAS DOWN TO WATER HEATER (40 CFH PROJECTED LOAD).

14 NATURAL GAS DOWN TO FURNACE (80 CFH PROJECTED LOAD).

15 NATURAL GAS TO RADIANT HEATER (150 CFH PROJECTED LOAD).

16 3" VENT DOWN.

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Engineers | Architects | Surveyors | Scientists

ISSUE:

#	DATE:	DESCRIPTION:
1	01/29/2026	ADD 03

BID SET

PROJECT:

Robinson-Palestine Water Commission

Water Treatment Plant and Campus

10711 N. State Highway 1
Robinson, IL 62454

DATE:	11/14/2025
DESIGNED:	CJA
DRAWN:	CJA
REVIEWED:	TAK

SHEET TITLE:

FIRST FLOOR PLUMBING PLAN - O/M

SHEET NUMBER:

1P1.1

PROJECT NO.: 0210007.00

12/9/2026 11:48:13 AM

BACKFLOW PREVENTER SCHEDULE

PLAN MARK	MAKE/MODEL	DESCRIPTION REMARKS
BFP1	WILKINS 975XL2S WATTS CONBRACO (2" & Smaller)	(LEAD FREE) REDUCED PRESSURE ZONE BACKFLOW PREVENTER, TWO INDEPENDENT CHECK VALVES, INTERMEDIATE RELIEF VALVE, SHUT-OFF VALVES, BALL TYPE TEST COCKS AND WYE STRAINER. (DOMESTIC WATER SERVICE) ASSE 1013
BFP2	WILKINS 375ADA WATTS CONBRACO (Fire Suppression)	REDUCED PRESSURE ZONE BACKFLOW PREVENTER, TWO INDEPENDENT CHECK VALVES, INTERMEDIATE RELIEF VALVE, SHUT-OFF VALVES, OSY GATE VALVES, BALL TYPE TEST COCKS, BY-PASS WITH METER. (FIRE SUPPRESSION SYSTEM) ASSE1047
BFP3	WILKINS 700XL WATTS CONBRACO (Ice Maker)	(LEAD FREE) BRONZE THREADED DUAL CHECK VALVE. (ICE MAKER) ASSE1024
OTHER ACCEPTABLE MANUFACTURER'S SHALL BE: AMES, FEBCO		

CLEANOUT SCHEDULE

PLAN MARK	DESCRIPTION AND REMARKS
FCO-1	FLOOR CLEANOUT (FINISHED AREAS): CAST IRON BODY, ADJUSTABLE, GAS AND WATER TIGHT THREADED ABS TAPERED PLUG, 5 INCH LIGHT DUTY TYPE B POLISHED NICKEL BRONZE COVER. ACCEPTABLE MANUFACTURERS: ZURN MODEL Z1400-BZI OR APPROVED EQUIVALENT BY WADE, JAY R. SMITH. NOTE/ACCESSORIES: VANDAL-PROOF TOP, OUTLET CONNECTION TYPE SHALL MATCH SPECIFIED PIPE.OUTLET SIZE AS INDICATED ON DRAWINGS.
FCO-2	FLOOR CLEANOUT (MECHANICAL/UNFINISHED AREAS): CAST IRON BODY, ADJUSTABLE, GAS AND WATER TIGHT THREADED TAPERED PLUG, HEAVY DUTY CAST-IRON COVER. ACCEPTABLE MANUFACTURERS: ZURN MODEL Z1400 OR APPROVED EQUIVALENT BY WADE, JAY R. SMITH. NOTE/ACCESSORIES: VANDAL-PROOF TOP, OUTLET CONNECTION TYPE SHALL MATCH SPECIFIED PIPE.OUTLET SIZE AS INDICATED ON DRAWINGS.
WCO-3	WALL CLEANOUT: PVC BODY, GAS AND WATER TIGHT THREADED ABS TAPERED PLUG, STAINLESS STEEL COVER. NOTE/ACCESSORIES: VANDAL-PROOF TOP, OUTLET CONNECTION TYPE SHALL MATCH SPECIFIED PIPE.OUTLET SIZE AS INDICATED ON DRAWINGS.
YCO-1	YARD CLEANOUT: CAST-IRON BODY, GAS AND WATER TIGHT THREADED ABS TAPERED PLUG, STAINLESS STEEL COVER. ACCEPTABLE MANUFACTURERS: ZURN MODEL Z1474 OR APPROVED EQUIVALENT BY WADE, JAY R. SMITH. NOTE/ACCESSORIES: VANDAL-PROOF TOP, OUTLET CONNECTION TYPE SHALL MATCH SPECIFIED PIPE.OUTLET SIZE AS INDICATED ON DRAWINGS.

DRAIN SCHEDULE

PLAN MARK	DESCRIPTION AND REMARKS
CB-1	CATCH BASIN (VEHICLE UP TO 56,200 LBS): 6 1/4 INCH WIDE x 20 3/4 INCH LONG x 20 INCH DEEP, HIGH DENSITY POLYETHYLENE, PRE-SLOPED CHANNELS, GRATE LOCKDOWN DEVICES, DUCTILE IRON CLASS C SLOTTED GRATE, HEAVY-DUTY POWDER COATED STEEL FRAME, REBAR CLIPS, CONSTRUCTION COVERS. ACCEPTABLE MANUFACTURERS: ZURN MODEL Z887-6-HD OR APPROVED EQUIVALENT BY WADE, JAY R. SMITH. NOTES/ACCESSORIES: DEEP SEAL P-TRAP, SEDIMENT BUCKET, VANDAL PROOF TOP, OUTLET CONNECTION TYPE SHALL MATCH SPECIFIED PIPE. OUTLET SIZE AS INDICATED ON DRAWINGS.
FD-1	FLOOR DRAIN (FINISHED AREAS): CAST IRON BODY, LIGHT DUTY, 6 INCH DIAMETER NICKEL BRONZE HEEL PROOF STRAINER, SEEPAGE FLANGE, FLASHING RING AND ADJUSTABLE CLAMPING COLLAR, ADJUSTABLE POLISHED NICKEL BRONZE RIM. ACCEPTABLE MANUFACTURERS: ZURN MODEL Z415-BZI OR APPROVED EQUIVALENT BY WADE, JAY R. SMITH. NOTE/ACCESSORIES: DEEP-SEAL P-TRAP, VANDAL-PROOF TOP. OUTLET CONNECTION TYPE SHALL MATCH SPECIFIED PIPE.OUTLET SIZE AS INDICATED ON DRAWINGS.
FD-2	FLOOR DRAIN (MECHANICAL ROOMS/UNFINISHED AREAS): CAST IRON BODY, MEDIUM DUTY, 7 INCH CAST-IRON SLOTTED GRATE, SEEPAGE PAN, COMBINATION FLASHING CLAMP AND FRAME. ACCEPTABLE MANUFACTURERS: ZURN MODEL Z507 OR APPROVED EQUIVALENT BY WADE, JAY R. SMITH. NOTE/ACCESSORIES: DEEP-SEAL P-TRAP. OUTLET CONNECTION TYPE SHALL MATCH SPECIFIED PIPE. OUTLET SIZE AS INDICATED ON DRAWINGS.
FD-3	FLOOR DRAIN (MECHANICAL ROOMS/UNFINISHED AREAS): CAST IRON BODY, MEDIUM DUTY, 7 INCH CAST-IRON SLOTTED GRATE, SEEPAGE PAN, COMBINATION FLASHING CLAMP AND FRAME. ACCEPTABLE MANUFACTURERS: ZURN MODEL Z507 OR APPROVED EQUIVALENT BY WADE, JAY R. SMITH. NOTE/ACCESSORIES: NO P-TRAP. INDIRECT WASTE TO SUMP. OUTLET CONNECTION TYPE SHALL MATCH SPECIFIED PIPE. OUTLET SIZE AS INDICATED ON DRAWINGS.
FS-1	FLOOR SINK: 12 INCH x 12 INCH x 10 INCH DEEP, CAST-IRON BODY, ACID RESISTANT INTERIOR AND TOP, INTERIOR BOTTOM DOME STRAINER. ACCEPTABLE MANUFACTURERS: ZURN MODEL Z1902 OR APPROVED EQUIVALENT BY WADE, JAY R. SMITH. NOTES/ACCESSORIES: DEEP-SEAL P-TRAP. OUTLET CONNECTION TYPE SHALL MATCH SPECIFIED PIPE.OUTLET SIZE AS INDICATED ON DRAWINGS.
FS-2	FLOOR SINK: 12 INCH x 12 INCH x 10 INCH DEEP, CAST-IRON BODY, ACID RESISTANT INTERIOR AND TOP, INTERIOR BOTTOM DOME STRAINER. ACCEPTABLE MANUFACTURERS: ZURN MODEL Z1902 OR APPROVED EQUIVALENT BY WADE, JAY R. SMITH. NOTES/ACCESSORIES: NO P-TRAP. INDIRECT WASTE TO SUMP. OUTLET CONNECTION TYPE SHALL MATCH SPECIFIED PIPE.OUTLET SIZE AS INDICATED ON DRAWINGS.
TD-1	TRENCH DRAIN (VEHICLE UP TO 56,200 LBS): 6 1/4 INCH WIDE x 80 INCH LONG, HIGH DENSITY POLYETHYLENE CHANNEL, HEAVY-DUTY POWDER COATED STEEL FRAME, PRE-SLOPED CHANNELS, GRATE LOCKDOWN DEVICES, 4 INCH WIDE x 20 INCH LONG DUCTILE IRON CLASS C SLOTTED GRATES, REBAR CLIPS, CONSTRUCTION COVERS. ACCEPTABLE MANUFACTURERS: ZURN MODEL Z886-HD OR APPROVED EQUIVALENT BY WATTS, JAY R. SMITH. NOTE/ACCESSORIES: DEEP-SEAL P-TRAP, VANDAL-PROOF. OUTLET CONNECTION TYPE SHALL MATCH SPECIFIED PIPE.OUTLET SIZE AS INDICATED ON DRAWINGS.

THERMOSTATIC MIXING VALVE SCHEDULE

PLAN MARK	MANUFACTURER	MODEL	GPM	INLET	OUTLET	MOUNTING	REMARKS
TMV-1	SYMMONS	7-225	0.5-4.5	1/2"	1/2"	WALL	(LEAD FREE) HIGH TEMP MIXING VALVE. PROVIDE WITH UNION ENDS, INLET CHECK VALVES, SET TO 110 F DEGREES. ASSE 1070 (POINT-OF-USE) (SINGLE FAUCET)
TMV-2	BRADLEY	S19-2100 S19-2200	2-14 2-23	1"	1 1/4"	WALL	PROVIDE WITH UNION ENDS, INLET CHECK VALVES, TEST CONNECTION, STAINLESS STEEL WALL CABINET, SET TO 85 F DEGREES. VERIFY THAT TMV SETTINGS MEET END USER REQUIREMENTS. ASSE 1071 (EYE/FACEWASH EMERGENCY MIXING VALVE)

NOTES:
1. DESIGN FLOWS BASED ON 5 PSI PRESSURE DROP MAXIMUM.
2. 0.5 GPM MINIMUM FLOW RATE CAN BE ACHIEVED WHEN PROPERLY INSTALLED WITH A RECIRCULATION SYSTEM AND RECIRCULATION PUMP AND PIPED PER MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS.
3. OTHER ACCEPTABLE MANUFACTURER'S SHALL BE: BRADLEY, SYMMONS, POWERS, LEONARD, WILKINS, ZURN.

PLUMBING FIXTURE SCHEDULE

PLAN MARK	DESCRIPTION AND REMARKS	MINIMUM INDIVIDUAL LINE SIZES			
		COLD WATER	HOT WATER	WASTE	VENT
ESH-1	EMERGENCY SHOWER / EYE WASH - FLOOR MOUNTED, 1-1/4 INCH GALVANIZED STEEL PIPE, SAFETY COATED WITH FLOOR FLANGE. SHOWER HEAD: 10 INCH DIAMETER IMPACT RESISTANT PLASTIC. SHOWER VALVE: SINGLE TEMPERATURE CHROME PLATED BRASS 1 INCH STAY OPEN BALL VALVE OPERATED BY STAINLESS STEEL PULL ROD WITH TRIANGULAR HANDLE. EYE WASH: 10 INCH DIAMETER IMPACT RESISTANT BOWL. CHROME PLATED BRASS SPRAY HEAD ASSEMBLY WITH TWIN SOFT FLOW, EYE WASH HEADS AND PROTECTIVE COVERS. EYE WASH VALVE: CHROME PLATED 1/2 INCH STAY OPEN BALL VALVE, HAND OPERATED PUSH HANDLE. ACCEPTABLE MANUFACTURERS: BRADLEY (S19-310), SPEAKMAN, HAWS, CHICAGO FAUCET, WESTERN. ACCESSORIES: PROVIDE ASSE 1071 RATED THERMOSTATIC MIXING VALVE, AND PROVIDE REFLECTIVE TAPE.	1"	1"	N/A	N/A
HB-1	HOSE BIBB - PIPE MOUNTED MALE COMPRESSION HOSE FAUCET WITH TEE HANDLE, ROUGH CHROME FINISH WITH 3/4 INCH INLET AND STANDARD HOSE THREAD OUTLET. INTEGRAL IN-LINE ATMOSPHERIC VACUUM BREAKER. WATER SERVICE AS INDICATED ON DRAWINGS. ACCEPTABLE MANUFACTURERS: CHICAGO FAUCET (998-RCF), T&S BRASS. (FOR USE IN MECHANICAL ROOMS, ETC.)	1/2"	N/A	N/A	N/A
LT-1	LAUNDRY TUB - FLOOR MOUNTED MOLDED STONE LAUNDRY SINK, 21 INCHES x 23 INCHES x 14 INCHES DEEP, SINGLE COMPARTMENT WITH BACK LEDGE DRAIN TRAY. ACCEPTABLE MANUFACTURERS: FIAT (FL-1), STERN-WILLIAMS, MUSTEE. LAUNDRY TUB TRIM: DECK MOUNTED CONCEALED PIPING 4 INCH SUPPLY FITTING, METAL HANDLES, BASKET STRAINER, ANGLE STOPS BY BRASSCRAFT OR McGUIRE, 17 GAUGE 1 1/2 INCH O.D. TAILPIECE AND 17 GAUGE 1 1/2 INCH P-TRAP BY BRASSCRAFT, McGUIRE, OR DEARBORN AND 6 INCH SWING SPOUT. PROVIDE WITH VACUUM BREAKER INTEGRAL WITH SPOUT. ACCEPTABLE MANUFACTURERS: CHICAGO FAUCET (891-L6BVB), T & S BRASS, DELTA COMMERCIAL, SPEAKMAN. ACCESSORIES: VERIFY EQUIPMENT REQUIREMENTS AND ROUGH-IN LOCATIONS. EXPOSED TRIM SHALL BE HEAVILY CHROME PLATED.	1/2"	1/2"	1 1/2"	1 1/2"
L-1	LAVATORY - SELF-RIMMING WHITE VITREOUS CHINA, 20 INCH x17 INCH OVAL BASIN, DRILLINGS ON 8 INCH CENTERS, OVERFLOW. ACCEPTABLE MANUFACTURERS: KOHLER (K2196), AMERICAN STANDARD, ELJER, CRANE, GERBER. LAVATORY TRIM: 8 INCH SUPPLY FITTINGS, 4 INCH WRIST BLADE HANDLES, VANDAL RESISTANT AERATOR, CAST BRASS DRAIN PLUG WITH FLAT STRAINER, ANGLE STOPS BY BRASSCRAFT OR McGUIRE, 17 GAUGE 1 1/4 INCH O.D. TAILPIECE AND 17 GAUGE 1 1/4 INCH P-TRAP BY BRASSCRAFT, McGUIRE, OR DEARBORN AND 5 INCH SPOUT. ACCEPTABLE MANUFACTURERS: CHICAGO FAUCET (404A-317-E12VP), T&S BRASS, DELTA COMMERCIAL, SPEAKMAN. ACCESSORIES: VERIFY EQUIPMENT REQUIREMENTS AND ROUGH-IN LOCATIONS. EXPOSED TRIM SHALL BE HEAVILY CHROME PLATED.	1/2"	1/2"	1 1/4"	1 1/2"
MSB-1	MOP SERVICE BASIN: FLOOR MOUNTED WHITE MOLDED STONE, 24 INCH x 24 INCH x 10 INCH DEEP WITH 1 INCH WIDE SHOULDERS STAINLESS STEEL STRAINER AND BUMPER GUARD. ACCEPTABLE MANUFACTURERS: FIAT MODEL MSB2424 OR APPROVED EQUIVALENT BY MUSTEE, ZURN. FAUCET: CHROME PLATED CAST BRASS VACUUM BREAKER SPOUT, 3/4 INCH HOSE THREADED OUTLET, CERAMIC CARTRIDGES, PAIL HOOK WITH WALL SUPPORT, INTEGRAL SCREWDRIVER STOPS WITH COVERING CAPS, STRAIGHT SHANK WITH FLANGE AND CROSS TYPE HANDLES. ACCEPTABLE MANUFACTURERS: CHICAGO FAUCET MODEL 897-CP OR APPROVED EQUIVALENT ZURN,T&S BRASS. NOTES/ACCESSORIES: PROVIDE WITH 5 FEET OF 1/2 INCH PLAIN END REINFORCED RUBBER HOSE, HOSE CLAMP AND MOP HANGER.	3/4"	3/4"	3"	2"
SC-1	SILLCOCK - FREEZE-PROOF WALL HYDRANT, KEY OPERATED WITH 1 5/8 INCH BRASS CASTINGS, BRASS OPERATING MECHANISM, ADJUSTABLE LOCK NUT, REMOVABLE NYLON SEAT, NICKEL BRASS DEEP BOX WITH KEY HANDLE, INTEGRAL ANTI-SIPHON, NON-FREEZE VACUUM BREAKER AND WALL CLAMP. ACCEPTABLE MANUFACTURERS: WOODFORD MODEL B67 OR APPROVED EQUIVALENT BY ZURN, WADE. NOTE/ACCESSORIES: MOUNT AT 18" ABOVE FINISHED GRADE. VERIFY WALL THICKNESS AND LENGTH OF WALL CLAMP AS REQUIRED BY WALL CONSTRUCTION AND ALL OTHER MOUNTING AS REQUIRED BY MANUFACTURER.	3/4"	N/A	N/A	N/A
SH-1 (ADA)	SHOWER BASE/ENCLOSURE: (BELOW FLOOR ROUGH-IN) 38 INCH x 37 INCH ONE-PIECE GELCOAT, FIBERGLASS SHOWER, PLAIN WALLS, TEXTURED FLOOR PATTERN, MOLDED WALL AND FLOOR FLANGES. ACCEPTABLE MANUFACTURERS: OASIS MODEL SHFW-3837-ADA10-(RS OR LS) OR APPROVED EQUIVALENT BY AQUATIC, KOHLER STERLING, MAXX. VALVE: 2.0 GPM, PRESSURE BALANCED MIXING VALVE, FLUSH MOUNT WITH CONCEALED PIPING, SINGLE LEVER AND INTEGRAL STOPS. SET LIMITS TO 110 DEGREES F. ACCEPTABLE MANUFACTURERS: SYMMONS MODEL S161XBODY OR APPROVED EQUIVALENT BY LEONARD VALVE, CHICAGO FAUCETS TRIM: SINGLE LEVER HANDLE, MULTI-STREAM SHOWER HEAD WITH UNIVERSAL BALL JOINT, BENT ARM AND WALL FLANGE, BACK PLATE. ACCEPTABLE MANUFACTURERS: SYMMONS MODEL C-96-300-B30-V-TRM OR APPROVED EQUIVALENT BY LEONARD, DELTA. NOTES/ACCESSORIES: VERIFY NOMINAL SHOWER BASE DIMENSIONS WITH ROUGH OPENING, MOUNT MOUNT SHOWER AND CONTROLS FOR ADA ACCESSIBILITY. ADA SEAT, GRAB BARS AND SUPPORTS SHALL BE FACTORY INSTALLED. COORDINATE WITH GC FOR CONCRETE SLAB DEPRESSION REQUIRED FOR SHOWER UNIT.	1/2"	1/2"	N/A	N/A
SK-1	SINK - SELF-RIMMING, EPOXY RESIN 21 INCH x18 INCH x10 INCH DEEP SINGLE COMPARTMENT. ACCEPTABLE MANUFACTURERS: ORION (ARLS-16), CHEMTOPS, DURCON. SINK TRIM: 2 SINGLE FAUCETS, 4 INCH WRIST BLADE, 5-1/4 INCH GOOSENECK SPOUT. ANGLE STOPS BY BRASSCRAFT OR McGUIRE, 17 GAUGE 1 1/2 INCH O.D. TAILPIECE AND 17 GAUGE 1 1/2 INCH P-TRAP BY BRASSCRAFT, McGUIRE, OR DEARBORN. ACCEPTABLE MANUFACTURERS: CHICAGO FAUCET (LWS1-B15-A), T&S BRASS, SPEAKMAN, DELTA COMMERCIAL. VERIFY EQUIPMENT LOCATION AND ROUGH IN REQUIREMENTS. ALL EXPOSED TRIM SHALL BE HEAVILY CHROME PLATED.	RAW WATER SAMPLE LINE	FINISHED WATER SAMPLE LINE	1 1/2"	1 1/2"
SK-2	SINK - SELF-RIMMING, EPOXY RESIN 21 INCH x18 INCH x10 INCH DEEP SINGLE COMPARTMENT. ACCEPTABLE MANUFACTURERS: ORION (ARLS-16), CHEMTOPS, DURCON. SINK TRIM: 8 INCH SUPPLY FITTINGS, 4 INCH WRIST BLADES, AERATOR, ANGLE STOPS BY BRASSCRAFT OR McGUIRE, 17 GAUGE 1 1/2 INCH O.D. TAILPIECE AND 17 GAUGE 1 1/2 INCH P-TRAP BY BRASSCRAFT, McGUIRE, OR DEARBORN, AND 9 INCH GOOSENECK SPOUT. ACCEPTABLE MANUFACTURERS: CHICAGO FAUCET (201A-GN8A-E3-317), T&S BRASS, SPEAKMAN, DELTA COMMERCIAL. VERIFY EQUIPMENT LOCATION AND ROUGH IN REQUIREMENTS. ALL EXPOSED TRIM SHALL BE HEAVILY CHROME PLATED.	1/2"	1/2"	1 1/2"	1 1/2"
1 SK-3	SINK: DROP-IN, TWO-COMPARTMENT, 18 GAUGE 304 STAINLESS STEEL, 29 INCH x 18 INCH x 7 5/8 INCH DEEP, UNDERCOATED, THREE HOLE, 3 1/2 INCH DRAIN. ACCEPTABLE MANUFACTURERS: ELKAY LR3319 OR APPROVED EQUIVALENT BY JUST, FRANKE, KOHLER. FAUCET: 8 INCH RIGID/SWING GOOSENECK, 8 INCH FIXED CENTERS, 4 INCH WRIST BLADE HANDLES, 2.2 GPM AERATOR, CERAMIC CARTRIDGES ACCEPTABLE MANUFACTURERS: CHICAGO FAUCETS MODEL 786-E3XKABCP OR APPROVED EQUIVALENT BY ZURN, T&S BRASS. TRIM: BASKET STRAINER, 17 GAUGE 1 1/2 INCH TAILPIECE AND 17 GAUGE 1 1/2 INCH P-TRAP BY BRASSCRAFT, McGUIRE, OR DEARBORN. ANGLE STOPS BY BRASSCRAFT OR McGUIRE, BRAIDED STEEL SUPPLIES. NOTES/ACCESSORIES: VERIFY EQUIPMENT LOCATION AND ROUGH IN REQUIREMENTS.	1/2"	1/2"	1 1/2"	1 1/2"
UR-1	URINAL: WALL MOUNTED, WHITE VITREOUS CHINA, SIPHON JET WITH INTEGRAL FLUSHING RIM AND TRAP, 3/4 INCH TOP SPUD INLET. ACCEPTABLE MANUFACTURERS: AMERICAN STANDARD MODEL 6590.001 OR APPROVED EQUIVALENT BY KOHLER, GERBER. FLUSH VALVE: EXPOSED, TOP SPUD, 1.0 GPF, DIAPHRAGM, INTEGRAL SCREWDRIVER STOP, VACUUM BREAKER, POLISHED CHROME. ACCEPTABLE MANUFACTURERS: SLOAN MODEL ROYAL 180-1.0 OR APPROVED EQUIVALENT BY ZURN. NOTES/ACCESSORIES: PROVIDE AND INSTALL URINAL CARRIER. VERIFY EQUIPMENT LOCATION AND ROUGH IN REQUIREMENTS. REFER TO ARCHITECTURAL DRAWINGS FOR MOUNTING HEIGHTS.	3/4"	N/A	2"	2"
WB-1	WASHER BOX: RECESSED 8 1/4 INCH x 12 3/4 INCH x 3 INCH DEEP 20 GAUGE POWDER COATED STEEL BOX, 9 1/2 INCH x 14 INCH POWDER COATED STEEL FRAME, 1/2" FEMALE SWEAT BOTTOM INLET, 1/4-TURNBRASS BALL VALVE 3/4 INCH HOSE THREAD OUTLET, 2" CENTER DRAIN OUTLET.. ACCEPTABLE MANUFACTURERS: GUY GRAY MODEL T200QT OR APPROVED EQUIVALENT BY OATEY, WATTS. NOTES/ACCESSORIES: VERIFY EQUIPMENT LOCATION AND ROUGH IN REQUIREMENTS. MOUNT IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS.	1/2"	1/2"	2"	2"
WC-1	WATER CLOSET: FLUSH VALVE, FLOOR MOUNTED, FLOOR OUTLET, WHITE, VITREOUS CHINA, ELONGATED BOWL, 1 1/2 INCH TOP SPUD, 1.6 GPF, 15 INCH RIM HEIGHT. ACCEPTABLE MANUFACTURERS: AMERICAN STANDARD MODEL 3451.001 OR APPROVED EQUIVALENT BY KOHLER, GERBER. FLUSH VALVE: EXPOSED, TOP SPUD, 1.6 GPF, DIAPHRAGM, INTEGRAL SCREWDRIVER STOP, VACUUM BREAKER, POLISHED CHROME. ACCEPTABLE MANUFACTURERS: SLOAN ROYAL 111-1.6 OR APPROVED EQUIVALENT BY ZURN. SEAT: HEAVY DUTY COMMERCIAL, WHITE, OPEN FRONT, ELONGATED, ANTI-MICROBIAL, SELF SUSTAINING HINGES. ACCEPTABLE MANUFACTURERS: BEMIS MODEL 1955SSTFR OR APPROVED EQUIVALENT BY CHURCH, AMERICAN STANDARD. NOTE/ACCESSORIES: VERIFY EQUIPMENT LOCATION AND ROUGH IN REQUIREMENTS. FLUSH VALVE SHALL HAVE HANDLE ON WIDE SIDE OF TOILET.	1 1/4"	N/A	4"	2"
WC-2 (ADA)	WATER CLOSET: FLUSH VALVE, FLOOR MOUNTED, FLOOR OUTLET, WHITE, VITREOUS CHINA, ELONGATED BOWL, 1 1/2 INCH TOP SPUD, 1.6 GPF, 16 1/2 INCH RIM HEIGHT. ACCEPTABLE MANUFACTURERS: AMERICAN STANDARD MODEL 3461.001 OR APPROVED EQUIVALENT BY KOHLER, GERBER. FLUSH VALVE: EXPOSED, TOP SPUD, 1.6 GPF, DIAPHRAGM, INTEGRAL SCREWDRIVER STOP, VACUUM BREAKER, POLISHED CHROME. ACCEPTABLE MANUFACTURERS: SLOAN ROYAL 111-1.6 OR APPROVED EQUIVALENT BY ZURN. SEAT: HEAVY DUTY COMMERCIAL, WHITE, OPEN FRONT, ELONGATED, ANTI-MICROBIAL, SELF SUSTAINING HINGES. ACCEPTABLE MANUFACTURERS: BEMIS MODEL 1955SSTFR OR APPROVED EQUIVALENT BY CHURCH, AMERICAN STANDARD. NOTE/ACCESSORIES: VERIFY EQUIPMENT LOCATION AND ROUGH IN REQUIREMENTS. FLUSH VALVE SHALL HAVE HANDLE ON WIDE SIDE OF TOILET. COORDINATE FLUSH VALVE WITH GRAB BARS. HEIGHT WITH SEAT SHALL BE 17 1/2 INCHES OR HIGHER.	1 1/4"	N/A	4"	2"

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ISSUE:

#	DATE:	DESCRIPTION:
1	01/29/2026	ADD 03

BID SET

PROJECT:
Robinson-Palestine Water Commission

Water Treatment Plant and Campus

10711 N. State Highway 1
Robinson, IL 62454

DATE:	11/14/2025
DESIGNED:	CJA
DRAWN:	CJA
REVIEWED:	TAK

SHEET TITLE:
SCHEDULES

SHEET NUMBER:
GP6.1

PROJECT NO.: 0210007.00

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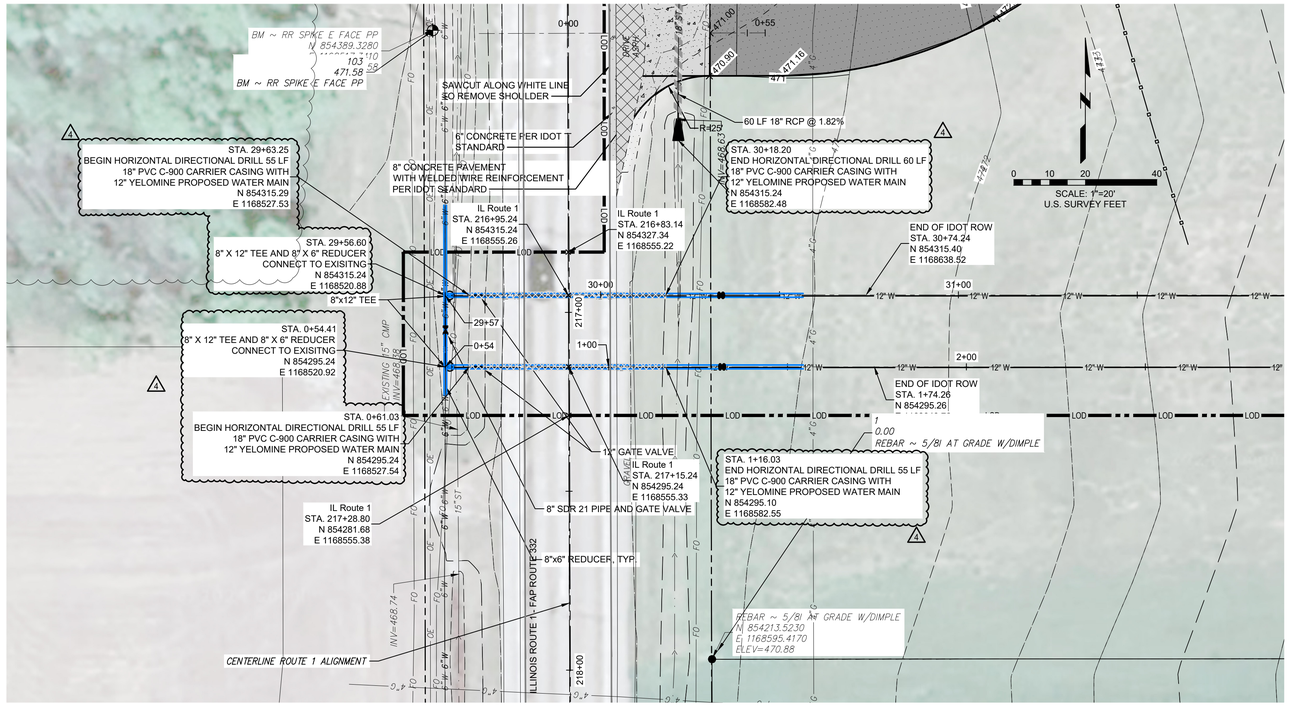
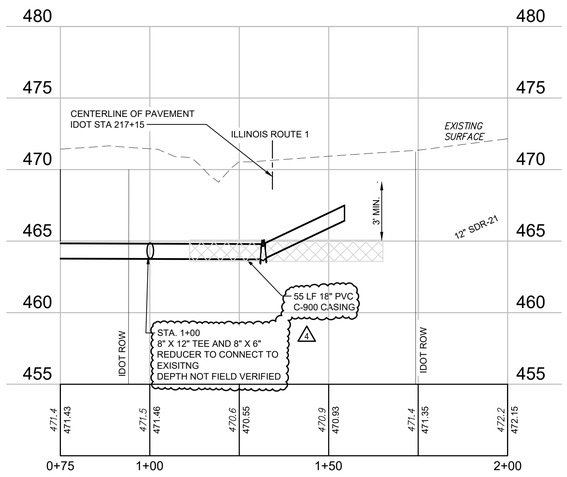
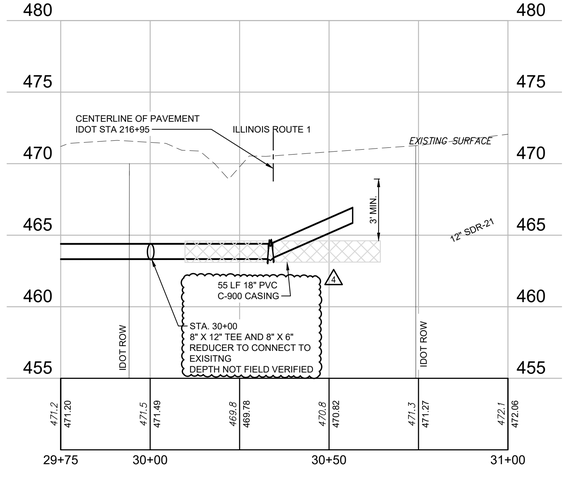


1 **PROPOSED WATER MAIN PLAN**

SCALE: 1"=20'



12" WATER MAIN - STA. 1+00 TO STA. 2+00



12" WATER MAIN - STA. 30+00 TO STA. 31+00

ILLINOIS ROUTE 1 - 12" WATER MAIN CROSSINGS

1 **PROPOSED WATER MAIN PROFILE**

SCALE: H 1"=20' V 1"=5'

NOTES:

1. CONTRACTOR SHALL COMPLETE WORK IN ACCORDANCE WITH IDOT REQUIREMENTS AND PERMIT.
2. THE STANDARD SPECIFICATIONS FOR WATER AND SEWER MAIN CONSTRUCTION IN ILLINOIS 8TH EDITION SHALL APPLY TO THIS WORK.
3. WATER SUPPLIES SHALL BE PROTECTED PER SECTION 370.350 OF THE ILLINOIS RECOMMENDED STANDARDS FOR SEWAGE WORKS.
4. HORIZONTALLY DIRECTIONALLY DRILLED WATER MAIN PIPE SHALL BE CERTA-LOC YELOMINE PIPE: ASTM D2241 (RESTRAINED JOINT) SDR-21 OR APPROVED EQUAL WITH MINIMUM PRESSURE RATING OF 200 PSI AND MINIMUM WALL THICKNESS OF 0.606 AS PER SPECIFICATION.
5. WATER MAIN SHALL BE PRESSURE TESTED WITH WATER AT 100 PSI FOR ONE HOUR WITHOUT LEAKAGE.
6. CONTRACTOR SHALL POTHOLE ALL UTILITIES PRIOR TO START OF WORK TO VERIFY LOCATION AND ELEVATION.
7. CONTRACTOR RESPONSIBLE FOR DETERMINING SUB SOIL CONDITION PRIOR TO BIDDING AND MAKING CONSIDERATION IN THE BID FOR SUCH.
8. DEVIATION FROM DRILL PATH SHALL NOT EXCEED 5% OF PLAN DEPTH OVER A 100' DISTANCE.
9. ALL MECHANICAL JOINTS SHALL BE RESTRAINED.
10. ABANDONED PIPE TO BE CAPPED AND GROUTED.

ILLINOIS DEPARTMENT OF TRANSPORTATION REQUIREMENTS:

HORIZONTALLY DIRECTIONAL DRILL THE FOLLOWING REQUIREMENTS MUST BE MET:

- PROVIDE SITE-SPECIFIC BORING DATA OR CONE PENETROMETER TESTING WHICH INCLUDES THE SOIL CLASSIFICATION AND BEARING CAPACITY OF THE SOIL IN THE DRILLING LOCATION.
- PROVIDE A CROSS SECTION AND SUMMARY OF THE DIRECTIONAL BORING PROCESS PROPOSED, INCLUDING PILOT HOLE SIZE, ANTICIPATED OVERBORE DIAMETER, RELIEF HOLE LOCATIONS AND THE NUMBER OF PASSES ANTICIPATED TO ENLARGE THE PILOT HOLE TO THE NECESSARY OVERBORE DIAMETER.
- PROVIDE INFORMATION ON THE REAMING MACHINE AND DRILLING FLUID/MUD MIXTURE PROPOSED FOR USE AT EACH DRILLING LOCATION.

FURTHER, DURING INSTALLATION, WE REQUEST THAT THE FOLLOWING GUIDELINES BE FOLLOWED:

- IDOT SHALL BE NOTIFIED A MINIMUM OF TWO (2) WEEKS PRIOR TO COMMENCEMENT OF WORK AND SHALL BE PROVIDED WITH APPROXIMATE WORK DATES.
- A 6-INCH PILOT HOLE IS REQUIRED FOR ALL DIRECTIONAL BORING.
- DIRECTIONAL BORES IN EXCESS OF THE 6 INCH PILOT HOLE SHALL BE ENLARGED USING MULTIPLE PASSES.
- BACKREAMING OF THE BORE IS REQUIRED.
- OVERBORE SHALL BE 25-50% GREATER THAN THE CASING OR CARRIER PIPE DIAMETER.
- RELIEF HOLES ARE REQUIRED.

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ISSUE:

#	DATE:	DESCRIPTION:
1	08/18/2021	BASIS OF DESIGN REVIEW
2	10/21/2021	SITE UPDATE
3	01/05/2026	ADDENDUM #2
4	01/23/2026	ADDENDUM #3

BID SET

PROJECT:
Robinson-Palestine Water Commission

Water Treatment Plant and Campus

10711 N. State Highway 1
Robinson, IL 62454

DATE:	11/14/2025
DESIGNED:	ACH
DRAWN:	GAB/BMH
REVIEWED:	ACH
FIELD BOOK NO.:	-

SHEET TITLE:

WATER MAIN PLAN & PROFILE

RTE. 1 IDOT CROSSINGS

SHEET NUMBER:

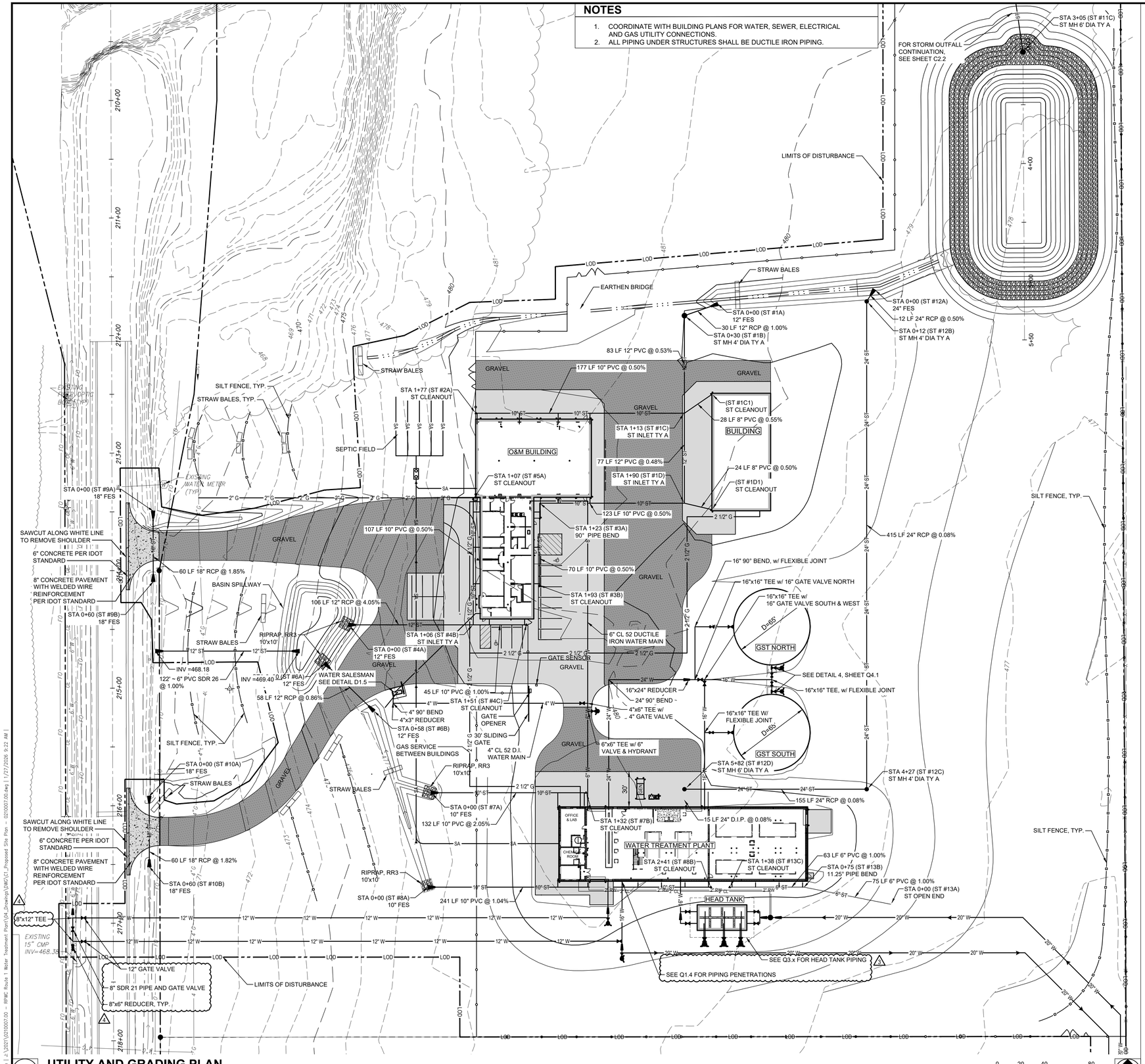
C1

-

PROJECT NO.: 0210007.00

NOTES

1. COORDINATE WITH BUILDING PLANS FOR WATER, SEWER, ELECTRICAL AND GAS UTILITY CONNECTIONS.
2. ALL PIPING UNDER STRUCTURES SHALL BE DUCTILE IRON PIPING.



1 UTILITY AND GRADING PLAN
SCALE: 1"=40'

STORM STRUCTURE DATA

NAME	RIM	INV. IN	INV. OUT
ST #1A 12" FES		12" INV. = 477.22 (W)	
ST #1B ST MH 4' DIA TY A	480.69	12" INV. = 477.62 (S)	12" INV. = 477.52 (E)
ST #1C ST INLET TY A	480.20	8" INV. = 479.34 (NE) 10" INV. = 478.61 (W) 12" INV. = 478.16 (S)	12" INV. = 478.06 (N)
ST #1C1 ST CLEANOUT	480.96		8" INV. = 479.50 (SW)
ST #1D ST INLET TY A	480.15	10" INV. = 478.62 (W) 8" INV. = 478.60 (E)	12" INV. = 478.52 (N)
ST #1D1 ST CLEANOUT	480.96		8" INV. = 478.72 (W)
ST #2A ST CLEANOUT	481.19		10" INV. = 479.50 (E)
ST #3A 90° PIPE BEND		10" INV. = 479.23 (S)	10" INV. = 479.23 (E)
ST #3B ST CLEANOUT	481.27		10" INV. = 479.58 (N)
ST #4A 12" FES		12" INV. = 474.00 (E)	
ST #4B ST INLET TY A	481.40	10" INV. = 478.96 (N) 10" INV. = 478.40 (E)	12" INV. = 478.30 (W)
ST #4C ST CLEANOUT	481.40		10" INV. = 478.85 (W)
ST #5A ST CLEANOUT	481.40		10" INV. = 479.50 (S)
ST #6A 12" FES		12" INV. = 474.50 (SE)	
ST #6B 12" FES			12" INV. = 475.00 (NW)
ST #7A 10" FES		10" INV. = 475.75 (E)	
ST #7B ST CLEANOUT	481.45		10" INV. = 478.45 (W)
ST #8A 10" FES		10" INV. = 476.50 (E)	
ST #8B ST CLEANOUT	480.50		10" INV. = 479.00 (W)
ST #9A 18" FES		18" INV. = 466.25 (S)	
ST #9B 18" FES			18" INV. = 467.36 (N)
ST #10A 18" FES		18" INV. = 467.54 (S)	
ST #10B 18" FES			18" INV. = 468.63 (N)
ST #11A 10" FES		10" INV. = 471.06 (S)	
ST #11B ST MH 4' DIA TY A	476.50	10" INV. = 471.36 (S)	10" INV. = 471.26 (N)
ST #11C ST MH 6' DIA TY A	474.00		10" INV. = 472.18 (N)
ST #12A 24" FES		24" INV. = 476.80 (SW)	
ST #12B ST MH 4' DIA TY A	480.10	24" INV. = 476.96 (S)	24" INV. = 476.86 (NE)
ST #12C ST MH 4' DIA TY A	480.50	24" INV. = 477.40 (W)	24" INV. = 477.30 (N)
ST #12D ST MH 6' DIA TY A	480.70	24" INV. = 477.63 (S)	24" INV. = 477.53 (E)
ST #13A ST OPEN END		6" INV. = 478.12 (W)	
ST #13B 11.25° PIPE BEND		6" INV. = 478.87 (W)	6" INV. = 478.87 (E)
ST #13C ST CLEANOUT	480.50		6" INV. = 479.50 (E)

STORM PIPE TABLE

NAME	SIZE	MATERIAL	LENGTH	INV. DOWN	INV. UP	SLOPE
ST #1A - ST #1B	12"	12" RCP	30'	477.22	477.52	1.00%
ST #1B - ST #1C	12"	12" PVC	83'	477.62	478.06	0.53%
ST #1C - ST #1C1	8"	8" PVC	28'	479.34	479.50	0.55%
ST #1C - ST #1D	12"	12" PVC	77'	478.16	478.52	0.48%
ST #1C - ST #2A	10"	10" PVC	177'	478.61	479.50	0.50%
ST #1D - ST #1D1	8"	8" PVC	24'	478.60	478.72	0.50%
ST #1D - ST #3A	10"	10" PVC	123'	478.62	479.23	0.50%
ST #3A - ST #3B	10"	10" PVC	70'	479.23	479.58	0.50%
ST #4A - ST #4B	12"	12" RCP	106'	474.00	478.30	4.05%
ST #4B - ST #4C	10"	10" PVC	45'	478.40	478.85	1.00%
ST #4B - ST #5A	10"	10" PVC	107'	478.96	479.50	0.50%
ST #6A - ST #6B	12"	12" RCP	58'	474.50	475.00	0.86%
ST #7A - ST #7B	10"	10" PVC	132'	475.75	478.45	2.05%
ST #8A - ST #8B	10"	10" PVC	241'	476.50	479.00	1.04%
ST #9A - ST #9B	18"	18" RCP	60'	466.25	467.36	1.85%
ST #10A - ST #10B	18"	18" RCP	60'	467.54	468.63	1.82%
ST #11A - ST #11B	10"	10" PVC	20'	471.06	471.26	1.00%
ST #11B - ST #11C	10"	10" PVC	205'	471.36	472.18	0.40%
ST #12A - ST #12B	24"	24" RCP	12'	476.86	476.80	0.50%
ST #12B - ST #12C	24"	24" RCP	415'	477.30	476.96	0.08%
ST #12C - ST #12D	24"	24" RCP	155'	477.40	477.53	0.08%
ST #12D - PLANT	24"	24" D.I.P.	15'	477.63	477.64	0.08%
ST #13A - ST #13B	6"	6" PVC	75'	478.12	478.87	1.00%
ST #13B - ST #13C	6"	6" PVC	63'	478.87	479.50	1.00%

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ISSUE:

#	DATE:	DESCRIPTION:
1	08/18/2021	BASIS OF DESIGN REVIEW
2	10/21/2021	SITE UPDATE
3	01/05/2026	ADDENDUM #2
4	01/23/2026	ADDENDUM #3

BID SET

PROJECT:
Robinson-Palestine Water Commission

Water Treatment Plant and Campus

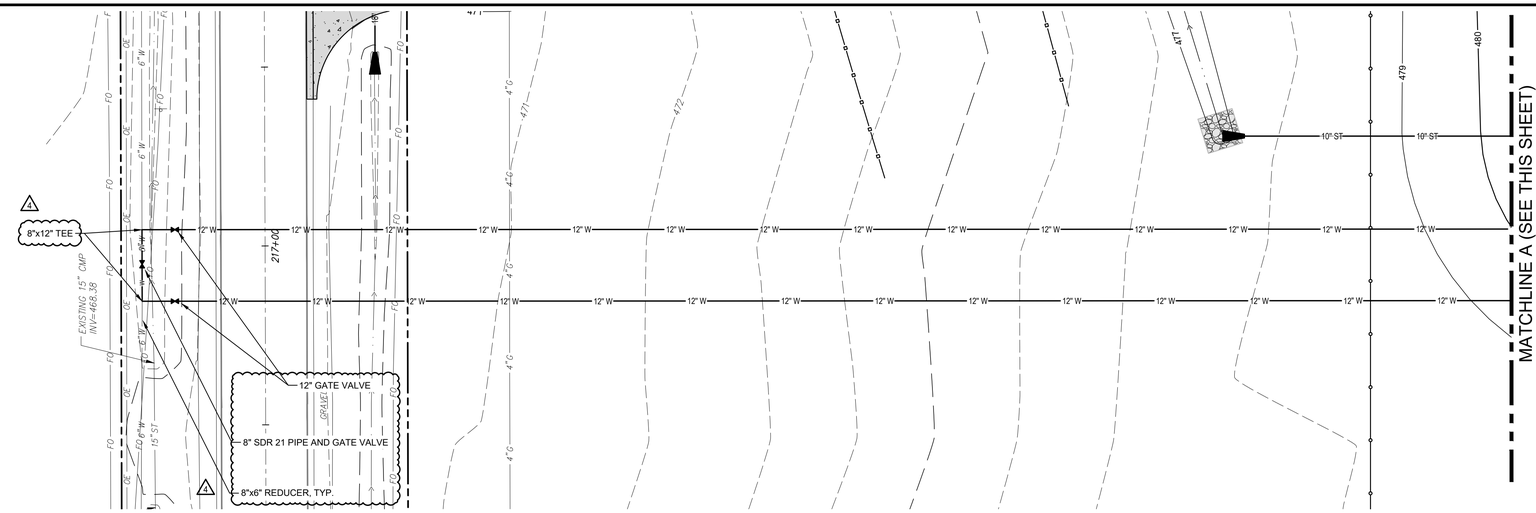
10711 N. State Highway 1
Robinson, IL 62454

DATE: 11/14/2025
DESIGNED: RRN
DRAWN: RRN
REVIEWED: ACH
FIELD BOOK NO.:

SHEET TITLE:
UTILITY PLAN

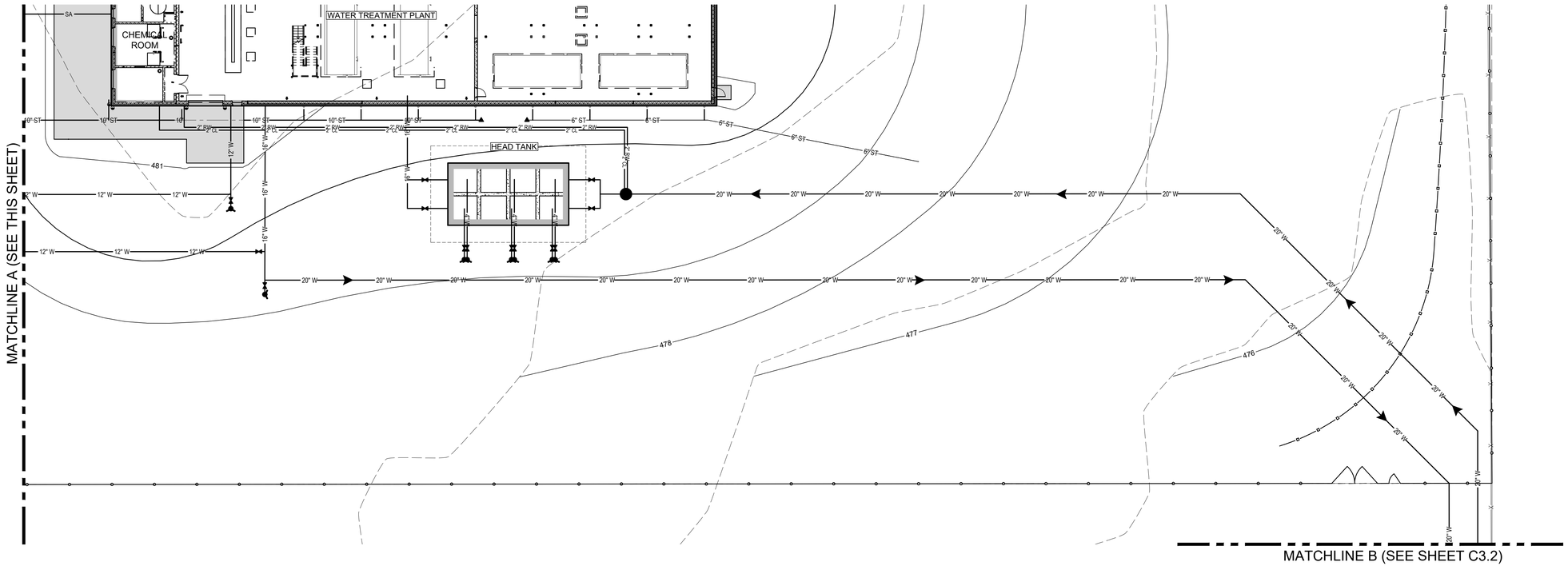
SHEET NUMBER:
C2.1

PROJECT NO.: 0210007.00



1 WATERMAIN PLAN
SCALE: 1"=20'

0 10 20 40
U.S. SURVEY FEET
NORTH



2 WATERMAIN PLAN
SCALE: 1"=20'

0 10 20 40
U.S. SURVEY FEET
NORTH

NOTES

1. COORDINATE WITH BUILDING PLANS FOR WATER CONNECTIONS.

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PROJECT:
Robinson-Palestine Water Commission

Water Treatment Plant and Campus

10711 N. State Highway 1
Robinson, IL 62454

DATE:	11/14/2025
DESIGNED:	ACH/BH
DRAWN:	GAB
REVIEWED:	ACH
FIELD BOOK NO.:	-

SHEET TITLE:
WATERMAIN PLAN

SHEET NUMBER:
C3.1

PROJECT NO.: 0210007.00

OVERALL LUMINAIRE SCHEDULE

TYPE	MANUFACTURER	CATALOG NUMBER	LAMP DESCRIPTION	VOLTAGE	LOAD (VA)	FINISH	MOUNTING	DESCRIPTION	BUILDING #
A	LITHONIA	CPX 2X2 3200LM 80CRI 35K SWL MIN10 MVOLT	LED, 3200LM, 3500K, 80CRI	120 V	30	WHITE	RECESSED	2X2 RECESSED PANEL	1,2
B	LITHONIA	CSS L48 7000LM MVOLT MIN10 ZT 35K 80CRI ZACVH M100	LED, 7000LM, 3500K, 80CRI	120 V	75	WHITE	PENDANT	4' LINEAR PENDANT	1
C	LITHONIA	CSS L48 7000LM MVOLT MIN10 ZT 35K 80CRI	LED, 7000LM, 3500K, 80CRI	120 V	75	WHITE	SURFACE	4' LINEAR	1
D1	LITHONIA	IBG 12000LM SEF ATL WD 40K 80CRI LSXR6	LED, 12000LM, 4000K, 80CRI	120 V	76	WHITE	SURFACE	2' HIGH BAY	1,3
D2	LITHONIA	XIB L24 12000LM ATWD MVOLT GZ10 35K 80CRI DWHXD	LED, 12000LM, 4000K, 80CRI	120 V	77.9	WHITE	SURFACE	2' HIGH BAY	2
F	LITHONIA	CPX 2X4 5000LM 80CRI 35K SWL MIN10 MVOLT	LED, 5000LM, 3500K, 80CRI	120 V	49	WHITE	RECESSED	2X4 RECESSED PANEL	1
G	LITHONIA	LDN6 35/30 L06 WR MVOLT GZ10	LED, 3000LM, 3500K, 80CRI	120 V	34.8	WHITE	RECESSED	6" RECESSED DOWNLIGHT	1,2
H	GOTHAM	EVO6SH 35/30 DFF SOL MVOLT EZ1	LED, 3000LM, 3500K, 80CRI	120 V	29.5	WHITE	RECESSED	6" RECESSED SHOWER DOWNLIGHT	1,2
J	LITHONIA	WDGE2 P3SW 35K 80CRI VW MVOLT SRM PIR DBLXD	LED, 3000LM, 3500K, 80CRI	120 V	23	BLACK	SURFACE	WALL MOUNTED EXTERIOR LUMINAIRE	1,2,3
K	LITHONIA	FEX L48 4000LM FGCL WD MVOLT GZ10 35K 80CRI DWHXD CRI	LED, 4000LM, 3500K, 80CRI	120 V	27.2	WHITE	SURFACE	4' LINEAR NEMA 4X	1,2
L	LITHONIA	CSS L96 10000LM MVOLT ZT 35K 80CRI	LED, 9950LM, 3500K, 80CRI	120 V	80	WHITE	SURFACE	8' LINEAR	1,2
M	LUMENPULSE	LFP-CH UL 120 48 10W 35K 80 WW FR LF DIM NVR BK	LED, 3500K, 80CRI	120 V	40	BLACK	SURFACE	SIGN LUMINAIRE	1,2
SA	LITHONIA	DSXO LED P3 35K 80CRI TFM MVOLT RPA PEBY DBLXD	LED, 8343LM, 3500K, 80CRI	208 V	69	BLACK	POLE	SITE LIGHT ON 30' POLE. PROVIDE BLL 027-1.5 PHOTOCELL	1
X	LITHONIA	LQM S W 3 G 120/277 M6	LED	120 V	1	WHITE	SURFACE	AC EXIT SIGN	1,2,3

NOTES:

A. SCHEDULE SHOWS ALL LUMINAIRES IN THE ENTIRE PROJECT. SEE BUILDING SPECIFIC SCHEDULE AND BUILDING NUMBER # NOTE FOR LUMINAIRES IN THAT SPECIFIC BUILDING.

B. REMOVE ALL FINGER PRINTS FROM LENSES, REFLECTORS, AND LOUVERS FOLLOWING LUMINAIRE INSTALLATION.

C. FOR APPROVAL OF LUMINAIRES FROM MANUFACTURERS OTHER THAN THOSE LISTED, PROPOSED LUMINAIRES SHALL BE SUBMITTED TO THE ARCHITECT/ENGINEER TEN BUSINESS DAYS PRIOR TO BID FOR REVIEW. FINAL DETERMINATION OF 'EQUAL' STATUS FOR BIDDING SHALL BE THE SOLE DETERMINATION OF THE ARCHITECT/ENGINEER.

D. PROVIDE ALL HOLLOW POLES WITH VIBRATION DAMPERS BY THE FACTORY.

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Engineers | Architects | Surveyors | Scientists

ISSUE:

#	DATE:	DESCRIPTION:
1	12/19/2025	ADDENDUM 1
2	01/15/2026	ADDENDUM 3

BID SET

PROJECT:
Robinson-Palestine Water Commission

Route 1 Water Treatement Plant

10711 N. State Highway 1
Robinson, IL 62454

DATE: 11/14/2025
DESIGNED: TJS/DAR
DRAWN: RCW
REVIEWED: WRK

SHEET TITLE:

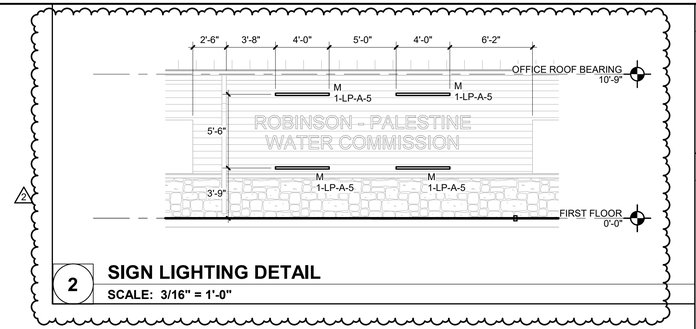
ELECTRICAL SITE SCHEDULES

SHEET NUMBER:

GE5.1

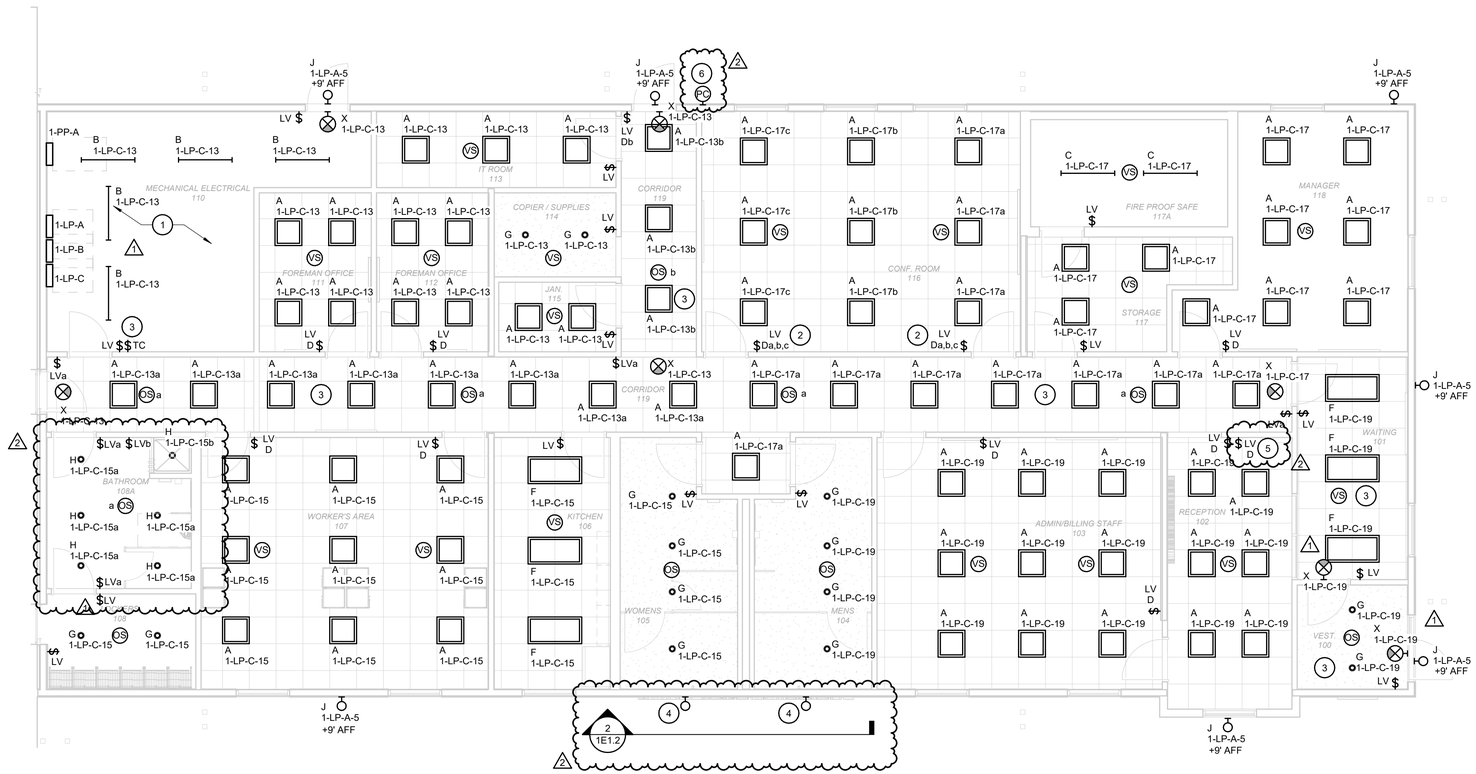
PROJECT NO.: 0210007.00

1/15/2026 3:55:11 PM



2 **SIGN LIGHTING DETAIL**

SCALE: 3/16" = 1'-0"



1 **OFFICE BUILDING LIGHTING PLAN**

SCALE: 3/16" = 1'-0"

0 2 4 8

TRUE NORTH

1/15/2026 3:55:14 PM

GENERAL NOTES

A. LIGHTING SYSTEM CONTROLS ARE DIAGRAMATIC AND ARE GENERIC. SUCCESSFUL LIGHTING CONTROL SYSTEM VENDOR SHALL THOROUGHLY EXAMINE PLANS AND SHALL PROVIDE CONTRACTOR WITH DETAILED LAYOUT DRAWINGS AND BILL OF MATERIALS TO PROVIDE A COMPLETE AND OPERATIONAL SYSTEM WITHOUT REQUESTS FOR ADDITIONAL MONETARY COMPENSATION FOR "MISSING" COMPONENTS.

B. CONTRACTOR SHALL PROVIDE NETWORK BASED LIGHTING CONTROLS SYSTEM. PROVIDE CAT 5 CONTROL WIRING BETWEEN ALL FIELD MOUNTED RELAY DEVICES. BASIS OF DESIGN IS ACUITY NLIGHT SYSTEM.

KEYNOTES (#)

1 INSTALL LUMINAIRES IN MECHANICAL ROOM AT +10' AFF.

2 PROVIDE NPODM SWITCH WITH 4 SCENES, ALL ON, ALL OFF, AND ALL DIMMING CONTROL. PROGRAM THE 4 SCENES AS FOLLOWS: FRONT PRESENTATION SET SWITCH LEGS AS FOLLOWS (a 20%, b 50% c 90%), BACK PRESENTATION SET SWITCH LEGS AS FOLLOWS (a 90%, b 50% c 20%), HALF POWER SET ALL SWITCH LEGS TO 50%, USER DEFINED SCENE SPECIFIED BY THE OWNER. VERIFY ALL LIGHT LEVELS WITH THE OWNER DURING COMISSIONING.

3 CORRIDOR LIGHTING CONTROL: PROVIDE (1) nLIGHT nDTC DIGITAL TIMECLOCK IN ELECTRICAL ROOM FOR TIME CONTROL OF SPACES NOTED (SPACES WITH KEYNOTE ON PLANS). PROVIDE CONTROL SUCH THAT SPACES NOTED TIME ON ONE-HOUR BEFORE BUSINESS OPENS AND TIME OFF ONE HOUR AFTER BUSINESS CLOSES. DURING BUISNESS HOURS, DIM CORRIDOR TO 50% 20 MINUTES AFTER THE SPACE IS UNOCCUPIED. WHEN CORRIDOR IS OCCUPIED RAISE LIGHT LEVELS TO 100%. AFTER HOURS PROVIDE CONTROL VIA LOCAL OCCUPANCY SENSOR AND SWITCH.

2 4 SEE DETAIL ON THIS SHEET FOR CIRCUIT, TYPE, MOUNTING HEIGHT, AND ADDITIONAL INFORMATION. VERIFY BRIGHTNESS LEVEL SET POINT WITH OWNER DURING COMISSIONING.

5 DIMMING/ON/OFF OVERIDE CONTROL FOR SIGN LIGHTING.

6 PROVIDE PHOTOCELL MOUNTED ON BUILDING EXTERIOR. PHOTOCELL TO PROVIDE ON/OFF CONTROL FOR SIGN LIGHTING.

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Robinson-Palestine Water Commission

Route 1 Water Treatement Plant

10711 N. State Highway 1
Robinson, IL 62454

DATE:	11/14/2025
DESIGNED:	TJS/DAR
DRAWN:	RCW
REVIEWED:	WRK

SHEET TITLE:

OFFICE BUILDING LIGHTING PLAN

SHEET NUMBER:

1E1.2

PROJECT NO.: 0210007.00

DATA CABLE SCHEDULE BUILDING #1: OFFICE BUILDING

CABLE TAG	CABLE TYPE	CABLE COLOR	RJ45 JACK COLOR	ROOM NUMBER	DESCRIPTION
OB-001	CAT-6A	BLUE	BLUE	109	WIRELESS ACCESS POINT
OB-002	CAT-6A	BLUE	BLUE	109	WIRELESS ACCESS POINT
OB-003	CAT-6A	BLUE	BLUE	109	WIRELESS ACCESS POINT
OB-004	CAT-6A	BLUE	BLUE	119	WIRELESS ACCESS POINT
OB-005	CAT-6A	BLUE	BLUE	119	WIRELESS ACCESS POINT
OB-006	CAT-6A	BLUE	BLUE	119	WIRELESS ACCESS POINT
OB-007	CAT-6	DARK GRAY	RED	111	WORKSTATION
OB-008	CAT-6	DARK GRAY	RED	111	WORKSTATION
OB-009	CAT-6	DARK GRAY	RED	112	WORKSTATION
OB-010	CAT-6	DARK GRAY	RED	112	WORKSTATION
OB-011	CAT-6	DARK GRAY	RED	116	WORKSTATION
OB-012	CAT-6	DARK GRAY	RED	116	WORKSTATION
OB-013	CAT-6	DARK GRAY	RED	116	WORKSTATION
OB-014	CAT-6	DARK GRAY	RED	116	WORKSTATION
OB-015	CAT-6	DARK GRAY	RED	116	WORKSTATION
OB-016	CAT-6	DARK GRAY	RED	116	WORKSTATION
OB-017	CAT-6	DARK GRAY	RED	116	WORKSTATION
OB-018	CAT-6	DARK GRAY	RED	116	WORKSTATION
OB-019	CAT-6	DARK GRAY	RED	107	WORKSTATION
OB-020	CAT-6	DARK GRAY	RED	107	WORKSTATION
OB-021	CAT-6	DARK GRAY	RED	107	WORKSTATION
OB-022	CAT-6	DARK GRAY	RED	107	WORKSTATION
OB-023	CAT-6	DARK GRAY	RED	107	WORKSTATION
OB-024	CAT-6	DARK GRAY	RED	107	WORKSTATION
OB-025	CAT-6	DARK GRAY	RED	107	WORKSTATION
OB-026	CAT-6	DARK GRAY	RED	107	WORKSTATION
OB-027	CAT-6	DARK GRAY	RED	107	WORKSTATION
OB-028	CAT-6	DARK GRAY	RED	107	WORKSTATION
OB-029	CAT-6	DARK GRAY	RED	107	WORKSTATION
OB-030	CAT-6	DARK GRAY	RED	107	WORKSTATION
OB-031	CAT-6	DARK GRAY	RED	107	WORKSTATION
OB-032	CAT-6	DARK GRAY	RED	107	WORKSTATION
OB-033	CAT-6	DARK GRAY	RED	107	WORKSTATION
OB-034	CAT-6	DARK GRAY	RED	107	WORKSTATION
OB-035	CAT-6	DARK GRAY	RED	107	WORKSTATION
OB-036	CAT-6	DARK GRAY	RED	107	WORKSTATION
OB-037	CAT-6	DARK GRAY	RED	103	WORKSTATION
OB-038	CAT-6	DARK GRAY	RED	103	WORKSTATION
OB-039	CAT-6	DARK GRAY	RED	103	WORKSTATION
OB-040	CAT-6	DARK GRAY	RED	103	WORKSTATION
OB-041	CAT-6	DARK GRAY	RED	103	WORKSTATION
OB-042	CAT-6	DARK GRAY	RED	103	WORKSTATION
OB-043	CAT-6	DARK GRAY	RED	103	WORKSTATION
OB-044	CAT-6	DARK GRAY	RED	103	WORKSTATION
OB-045	CAT-6	DARK GRAY	RED	103	WORKSTATION
OB-046	CAT-6	DARK GRAY	RED	103	WORKSTATION
OB-047	CAT-6	DARK GRAY	RED	103	WORKSTATION
OB-048	CAT-6	DARK GRAY	RED	103	WORKSTATION
OB-049	CAT-6	DARK GRAY	RED	102	WORKSTATION
OB-050	CAT-6	DARK GRAY	RED	102	WORKSTATION
OB-051	CAT-6	DARK GRAY	RED	102	WORKSTATION
OB-052	CAT-6	DARK GRAY	RED	102	WORKSTATION
OB-053	CAT-6	DARK GRAY	RED	102	WORKSTATION
OB-054	CAT-6	DARK GRAY	RED	118	WORKSTATION
OB-055	CAT-6	DARK GRAY	RED	118	WORKSTATION
OB-056	CAT-6	DARK GRAY	RED	EXTERIOR	CAMREA
OB-057	CAT-6	DARK GRAY	RED	EXTERIOR	CAMREA
OB-058	CAT-6	DARK GRAY	RED	EXTERIOR	CAMREA
OB-059	CAT-6	DARK GRAY	RED	EXTERIOR	CAMREA
OB-060	CAT-6	DARK GRAY	RED	EXTERIOR	CAMREA
OB-061	CAT-6	DARK GRAY	RED	EXTERIOR	CAMREA
OB-062	CAT-6	DARK GRAY	RED	EXTERIOR	CAMREA
OB-063	CAT-6	DARK GRAY	RED	101	CAMREA
OB-064	CAT-6	DARK GRAY	RED	119	CAMREA
OB-065	CAT-6	DARK GRAY	RED	119	DISPLAY
OB-066	CAT-6	DARK GRAY	RED	103	DISPLAY
OB-067	CAT-6	DARK GRAY	RED	116	DISPLAY

1

AREA 1, OFFICE BUILDING POWER CIRCUITS SCHEDULE

EQUIPMENT INFORMATION			POWER CIRCUIT INFORMATION		FEEDER/RACEWAY INFORRMATION				EQUIPMENT DISCONNECT	
EQUIPMENT TAG	EQUIPMENT DESCRIPTION	EQUIPMENT LOCATION	CIRCUIT TYPE	ELECTRICAL LOAD	FEEDER	TO (SOURCE)	CONDUIT SIZE	NOTES	DISC TYPE	DISC SIZE
AC-1	AIR COMPRESSOR #1	STORAGE AREA 109	208V 1-PHASE	7.5 HP	2#8, 1#10G	1-LP-B	3/4"C		NF	60A
CF-2	CEILING FAN #2	STORAGE AREA 109	480V 3-PHASE	2.5 FLA	3#12, 1#12G	1-PP-A	3/4"C		TT	20A
CF-5	CEILING FAN #5	STORAGE AREA 109	480V 3-PHASE	2.5 FLA	3#12, 1#12G	1-PP-A	3/4"C		TT	20A
CF-6	CEILING FAN #6	OFFICE 111	120V 1-PHASE	16 FLA	2#10, 1#10G	1-LP-C	3/4"C		TT	30A
CF-7	CEILING FAN #7	OFFICE 112	120V 1-PHASE	2.3 FLA	2#12, 1#12G	1-LP-C	3/4"C		TT	20A
CF-8	CEILING FAN #8	WORKERS AREA 107	120V 1-PHASE	2.3 FLA	2#12, 1#12G	1-LP-C	3/4"C		TT	20A
CF-9	CEILING FAN #9	CONFERENCE 116	120V 1-PHASE	2.3 FLA	2#12, 1#12G	1-LP-C	3/4"C		TT	20A
CF-10	CEILING FAN #10	MANAGER 118	120V 1-PHASE	2.3 FLA	2#12, 1#12G	1-LP-C	3/4"C		TT	20A
CU-1	CONDENSING UNIT #1	EXTERIOR	208V 1-PHASE	18.4 MCA	2#10, 1#10G	1-LP-B	3/4"C		NF	30A
CU-2	CONDENSING UNIT #2	EXTERIOR	208V 1-PHASE	18.4 MCA	2#10, 1#10G	1-LP-B	3/4"C		NF	30A
CU-3	CONDENSING UNIT #3	EXTERIOR	208V 1-PHASE	18.4 MCA	2#10, 1#10G	1-LP-B	3/4"C		NF	30A
CU-4	CONDENSING UNIT #4	EXTERIOR	208V 1-PHASE	11 MCA	2#10, 1#10G	1-LP-B	3/4"C		NF	30A
DSU-1	DUCTLESS SPLIT UNIT #1	IT ROOM 113	208V 1-PHASE	1 MCA	-	CU-4	1"C	1	-	-
EF-1	EXHAUST FAN #1	STORAGE AREA 109	208V 1-PHASE	2.4 FLA	3#12, 1#12G	1-LP-B	3/4"C	2,3	-	-
EF-2	EXHAUST FAN #2	STORAGE AREA 109	208V 1-PHASE	2.4 FLA	3#12, 1#12G	1-LP-B	3/4"C	2,3	-	-
EF-9	EXHAUST FAN #9	PROCESS ROOM	120V POWER	11 FLA	1/C	2-LP-C	3/4" C		-	-
EF-10	EXHAUST FAN #10	PROCESS ROOM	120V POWER	11 FLA	1/C	2-LP-C	3/4" C		-	-
EF-11	EXHAUST FAN #11	PROCESS ROOM	120V POWER	1.5 FLA	1/C	2-LP-C	3/4" C		-	-
ERV-1	ENERGY RECOVERY VENTILATOR #1	MECHANICAL ELECTRICAL 110	208V 1-PHASE	3.9 MCA	2#12, 1#12G	1-LP-B	3/4"C		NF	30A
GF-1	GAS FURNACE #1	MECHANICAL/ELECTRICAL 110	120V 1-PHASE	10.3 FLA	2#12, 1#12G	1-LP-B	3/4"C		TT	20A
GF-2	GAS FURNACE #2	MECHANICAL/ELECTRICAL 110	120V 1-PHASE	10.3 FLA	2#12, 1#12G	1-LP-B	3/4"C		TT	20A
GF-3	GAS FURNACE #3	MECHANICAL/ELECTRICAL 110	120V 1-PHASE	10.3 FLA	2#12, 1#12G	1-LP-B	3/4"C		TT	20A
GRH-1	GAS RADIANT HEATER #1	STORAGE AREA 109	120V 1-PHASE	1 FLA	2#12, 1#12G	1-LP-B	3/4"C		SW	20A
GRH-2	GAS RADIANT HEATER #2	STORAGE AREA 109	120V 1-PHASE	1 FLA	2#12, 1#12G	1-LP-B	3/4"C		SW	20A
GWH-3	GAS WATER HEATER #1	MECHANICAL/ELECTRICAL 110	120V 1-PHASE	5 FLA	2#12, 1#12G	1-LP-B	3/4"C		NF	30A
HWCP-1	HOT WATER CIRCULATING PUMP #1	MECHANICAL/ELECTRICAL 110	120V 1-PHASE	.43 FLA	2#12, 1#12G	1-LP-B	3/4"C		TT	20A
L-1	LOUVER	STORAGE AREA 109	120V 1-PHASE	.05 FLA	2#12, 1#12G	EF 1	3/4"C	2	-	-
L-2	LOUVER	STORAGE AREA 109	120V 1-PHASE	.05 FLA	2#12, 1#12G	EF 2	3/4"C	2	-	-
L-4	LOUVER	STORAGE AREA 109	120V 1-PHASE	.05 FLA	2#12, 1#12G	EF 2	3/4"C		-	-
L-6.5	LOUVER	ROOM 205	120V 1-PHASE	.05 FLA	2#12, 1#12G	EF 5	3/4"C	2	-	-
L-6.6	LOUVER	ROOM 205	120V 1-PHASE	.05 FLA	2#12, 1#12G	EF 6	3/4"C	2	-	-
L-6.7	LOUVER	ROOM 205	120V 1-PHASE	.05 FLA	2#12, 1#12G	EF 7	3/4"C	2	-	-
L-7.11	LOUVER	PROCESS ROOM	120V 1-PHASE	.05 FLA	2#12, 1#12G	EF 7	3/4"C		-	-
L-8.9	LOUVER	PROCESS ROOM	120V 1-PHASE	.05 FLA	2#12, 1#12G	EF 7	3/4"C	<varies>	-	-
L-8.10	LOUVER	PROCESS ROOM	120V 1-PHASE	.05 FLA	2#12, 1#12G	EF 7	3/4"C		-	-
MD-1	MOTORIZED DAMPER	STORAGE AREA 109	120V 1-PHASE	.05 FLA	2#12, 1#12G	EF 1	3/4"C	2	-	-
MD-2	MOTORIZED DAMPER	STORAGE AREA 109	120V 1-PHASE	.05 FLA	2#12, 1#12G	EF 2	3/4"C	2	-	-
MD-9	MOTORIZED DAMPER	PROCESS ROOM	120V 1-PHASE	.05 FLA	1/C	SF 2	3/4"C		-	-
MD-10	MOTORIZED DAMPER	PROCESS ROOM	120V 1-PHASE	.05 FLA	1/C	SF 2	3/4"C		-	-
MD-11	MOTORIZED DAMPER	PROCESS ROOM	120V 1-PHASE	.05 FLA	1/C	SF 2	3/4"C		-	-
OHD-1	OVERHEAD COILING DOOR #1	STORAGE AREA 109	120V 1-PHASE	1 HP	2#10, 1#10G	1-LP-C	3/4"C		NF	30A
OHD-2	OVERHEAD COILING DOOR #2	STORAGE AREA 109	120V 1-PHASE	1 HP	2#10, 1#10G	1-LP-C	3/4"C		NF	30A
OHD-3	OVERHEAD COILING DOOR #3	STORAGE AREA 109	120V 1-PHASE	1 HP	2#10, 1#10G	1-LP-C	3/4"C		NF	30A
OHD-4	OVERHEAD COILING DOOR #4	STORAGE AREA 109	120V 1-PHASE	1 HP	2#10, 1#10G	1-LP-C	3/4"C		NF	30A
OHD-5	OVERHEAD COILING DOOR #5	STORAGE AREA 109	120V 1-PHASE	1 HP	2#10, 1#10G	1-LP-C	3/4"C		NF	30A
OHD-6	OVERHEAD COILING DOOR #6	STORAGE AREA 109	120V 1-PHASE	1 HP	2#10, 1#10G	1-LP-C	3/4"C		NF	30A
OHD-7	OVERHEAD COILING DOOR #7	STORAGE AREA 109	120V 1-PHASE	1 HP	2#10, 1#10G	1-LP-C	3/4"C		NF	30A

1

NOTES:

1. INTERIOR UNIT FED FROM EXTERIOR UNIT. PROVIDE CONDUIT FOR MANUFACTURER CABLE.
2. EXHAUST FAN INTERLOCKED WITH MOTERIZED DAMPER. PROVIDE NEUTRAL WIRE FOR MOTORIZED DAMPER.
3. INTEGRAL DISCONNECT PROVIDED WITH UNIT.

AREA 1, OFFICE BUILDING LUMINAIRE SCHEDULE

TYPE	MANUFACTURER	CATALOG NUMBER	LAMP DESCRIPTION	VOLTAGE	LOAD (VA)	FINISH	MOUNTING	DESCRIPTION
A	LITHONIA	CPX 2X2 3200LM 80CRI 35K SWL MIN10 MVOLT	LED, 3200LM, 3500K, 80CRI	120 V	30	WHITE	RECESSED	2X2 RECESSED PANEL
B	LITHONIA	CSS L48 7000LM MVOLT MIN10 ZT 35K 80CRI ZACVH M100	LED, 7000LM, 3500K, 80CRI	120 V	75	WHITE	PENDANT	4' LINEAR PENDANT
C	LITHONIA	CSS L48 7000LM MVOLT MIN10 ZT 35K 80CRI	LED, 7000LM, 3500K, 80CRI	120 V	75	WHITE	SURFACE	4' LINEAR
D1	LITHONIA	IBG 12000LM SEF ATL WD 40K 80CRI LSXR6	LED, 12000LM, 4000K, 80CRI	120 V	76	WHITE	SURFACE	2' HIGH BAY
F	LITHONIA	CPX 2X4 5000LM 80CRI 35K SWL MIN10 MVOLT	LED, 5000LM, 3500K, 80CRI	120 V	49	WHITE	RECESSED	2X4 RECESSED PANEL
G	LITHONIA	LDN6 35/30 L06 WR MVOLT GZ10	LED, 3000LM, 3500K, 80CRI	120 V	34.8	WHITE	RECESSED	6" RECESSED DOWNLIGHT
H	GOTHAM	EVO6SH 35/30 DFF SOL MVOLT EZ1	LED, 3000LM, 3500K, 80CRI	120 V	29.5	WHITE	RECESSED	6" RECESSED SHOWER DOWNLIGHT
J	LITHONIA	WDGE2 P3SW 35K 80CRI VW MVOLT SRM PIR DBLXD	LED, 3000LM, 3500K, 80CRI	120 V	23	BLACK	SURFACE	WALL MOUNTED EXTERIOR LUMINAIRE
M	LUMENPULSE	LFP-CH UL 120 48 10W 35K 80 WW FR LF DIM NVR BK	LED, 3500K, 80CRI	120 V	40	BLACK	SURFACE	SIGN LUMINAIRE
SA	LITHONIA	DSX0 LED P3 35K 80CRI T3M MVOLT RPA PER7 DBLXD	LED, 6343LM, 3500K, 80CRI	208 V	69	BLACK	POLE	SITE LIGHT ON 30' POLE, PROVIDE DLL127F 1.5 PHOTOCELL
X	LITHONIA	LQM S W 3 G 120/277 M6	LED	120 V	1	WHITE	SURFACE	AC EXIT SIGN

2

NOTES:

A. REMOVE ALL FINGER PRINTS FROM LENSES, REFLECTORS, AND LOUVERS FOLLOWING LUMINAIRE INSTALLATION.

B. FOR APPROVAL OF LUMINAIRES FROM MANUFACTURERS OTHER THAN THOSE LISTED, PROPOSED LUMINAIRES SHALL BE SUBMITTED TO THE ARCHITECT/ENGINEER TEN BUSINESS DAYS PRIOR TO BID FOR REVIEW. FINAL DETERMINATION OF 'EQUAL' STATUS FOR BIDDING SHALL BE THE SOLE DETERMINATION OF THE ARCHITECT/ENGINEER.

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Robinson-Palestine Water Commission

Route 1 Water Treatement Plant

10711 N. State Highway 1
Robinson, IL 62454

DATE:	11/14/2025
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SHEET TITLE:

OFFICE BUILDING SCHEDULES

SHEET NUMBER:

1E5.2

PROJECT NO.: 0210007.00

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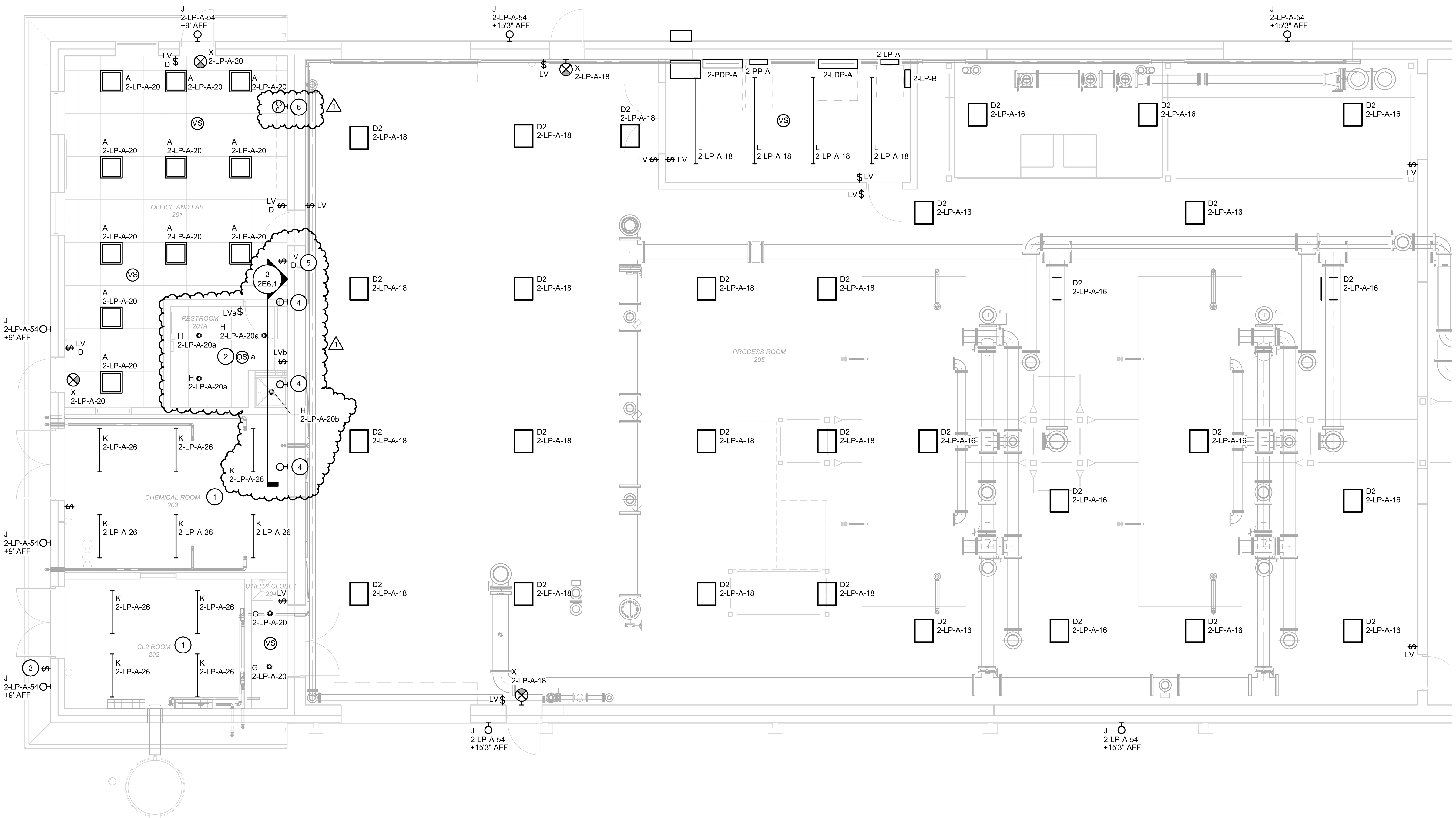

1 PROCESS BUILDING LIGHTING PLAN

SCALE: 3/16" = 1'-0"

0 2 4 8

TRUE NORTH

GENERAL NOTES

A. LIGHTING SYSTEM CONTROLS ARE DIAGRAMATIC AND GENERIC. SUCCESSFUL LIGHTING CONTROL SYSTEM VENDOR SHALL THOROUGHLY EXAMINE PLANS AND SHALL PROVIDE CONTRACTOR WITH DETAILED LAYOUT DRAWINGS AND BILL OF MATERIALS TO PROVIDE A COMPLETE AND OPERATIONAL SYSTEM WITHOUT REQUESTS FOR ADDITIONAL MONETARY COMPENSATION FOR "MISSING" COMPONENTS.

B. CONTRACTOR SHALL PROVIDE NETWORK BASED LIGHTING CONTROLS SYSTEM. PROVIDE CAT 5 CONTROL WIRING BETWEEN ALL FIELD MOUNTED RELAY DEVICES. BASIS OF DESIGN IS ACUITY NLIGHT SYSTEM.

C. INSTALL ALL HIGH BAY TYPE D2 LUMINAIRES AT 24' AFF

KEYNOTES

1 PROVIDE PVC CONDUIT FOR ALL CONDUIT IN THIS SPACE.

2 INTERLOCK FAN CONTROL WITH LIGHTING OCCUPANCY CONTROLS.

3 LIGHTING CONTROL INTERLOCKED WITH FAN OPERATION. SEE DETAILS FOR CONTROL CIRCUIT.

4 SEE SECTION VIEW ON SHEET 2E6.1 FOR LUMINAIRE TYPE, CIRCUIT INFORMATION, AND MOUNTING LOCATION. VERIFY BRIGHTNESS LEVEL SET POINT WITH OWNER DURING COMISSIONING.

5 DIMMING/ON/OFF OVERIDE CONTROL FOR SIGN LIGHTING.

6 PROVIDE PHOTOCELL MOUNTED ON BUILDING EXTERIOR. PHOTOCELL TO PROVIDE ON/OFF CONTROL FOR SIGN LIGHTING. SEE 2E6.1 DETAIL 3.

1

LUMINAIRE SCHEDULE

TYPE	MANUFACTURER	CATALOG NUMBER	LAMP DESCRIPTION	VOLTAGE	LOAD (VA)	FINISH	MOUNTING	DESCRIPTION
D2	LITHONIA	XIB L24 12000LM ATWD MVOLT GZ10 35K 80CRI DWHXD	LED, 12000LM, 4000K, 80CRI	120 V	77.9	WHITE	SURFACE	2' HIGH BAY
J	LITHONIA	WDGE2 P3SW 35K 80CRI VW MVOLT SRM PIR DBLXD	LED, 3000LM, 3500K, 80CRI	120 V	23	BLACK	SURFACE	WALL MOUNTED EXTERIOR LUMINAIRE
K	LITHONIA	FEX L48 4000LM FGCL WD MVOLT GZ10 35K 80CRI DWHXD CRI	LED, 4000LM, 3500K, 80CRI	120 V	27.2	WHITE	SURFACE	4' LINEAR NEMA 4X
L	LITHONIA	CSS L96 6000LM MVOLT 35K 80CRI	LED, 6000LM, 3500K, 80CRI	120 V	60	WHITE	SURFACE	8' LINEAR
M	LUMENPULSE	LFP-CH UL 120 48 10W 35K 80 WW FR LF DIM NVR BK	LED, 3500K, 80CRI	120 V	40	BLACK	SURFACE	SIGN LUMINAIRE
X	LITHONIA	LQM S W 3 G 120/277 M6	LED	120 V	1	WHITE	SURFACE	AC EXIT SIGN

1

NOTES: A. REMOVE ALL FINGER PRINTS FROM LENSES, REFLECTORS, AND LOUVERS FOLLOWING LUMINAIRE INSTALLATION.

B. FOR APPROVAL OF LUMINAIRES FROM MANUFACTURERS OTHER THAN THOSE LISTED, PROPOSED LUMINAIRES SHALL BE SUBMITTED TO THE ARCHITECT/ENGINEER TEN BUSINESS DAYS PRIOR TO BID FOR REVIEW. FINAL DETERMINATION OF 'EQUAL' STATUS FOR BIDDING SHALL BE THE SOLE DETERMINATION OF THE ARCHITECT/ENGINEER.

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ISSUE:

#	DATE:	DESCRIPTION:
1	01/15/2026	ADDENDUM 3

BID SET

PROJECT:
Robinson-Palestine Water Commission

Route 1 Water Treatement Plant

10711 N. State Highway 1
Robinson, IL 62454

DATE:	11/14/2025
DESIGNED:	TJS/DAR
DRAWN:	RCW
REVIEWED:	WRK

SHEET TITLE:
PROCESS BUILDING LIGHTING PLAN

SHEET NUMBER:
2E1.1

PROJECT NO.: 0210007.00

1/15/2026 3:55:25 PM

KEYNOTES (#)

1 PROVIDE NEMA 4R ENCLOSURE FOR INSTRUMENTATION. PROVIDE HEAT TRACE ON WATER SAMPLING LINE.

2 PROVIDE 30A NON-FUSED DISCONNECT FOR HEAT TRACE. PROVIDE 2#8, 1#8G FOR HEAT TRACE CIRCUIT.

3 TANK GROUNDING TAB. SEE DETAIL 2 THIS SHEET.

GROUND STORAGE TANK ANALOG CIRCUITS SCHEDULE

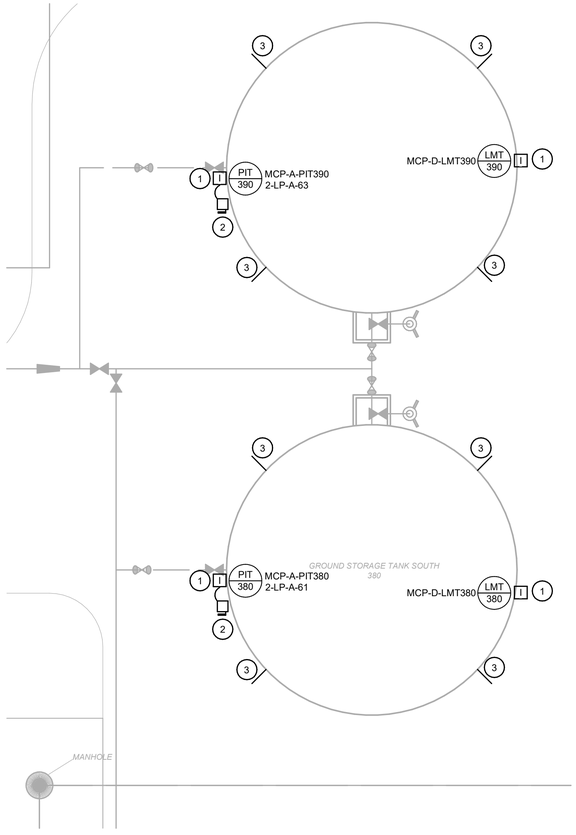
EQUIPMENT INFORMATION			CIRCUIT INFORMATION		CONDUCTOR/CONDUIT INFORMATION		
EQUIPMENT TAG	EQUIPMENT DESCRIPTION	EQUIPMENT LOCATION	CICUIT TAG (A-###)	CICUIT TYPE (A)	CONDUCTOR	CONDUIT	TO (SOURCE) (A)
PIT-380	GROUND STORAGE TANK #1 PRESSURE (CERABAR PMP21)	GROUND STORAGE TANK INFLUENT	A-PIT380	4-20 mA	TSP(2/16)	1/2"C	MCP
PIT-390	GROUND STORAGE TANK #2 PRESSURE (CERABAR PMP21)	GROUND STORAGE TANK INFLUENT	A-PIT390	4-20 mA	TSP(2/16)	1/2"C	MCP

GROUND STORAGE TANK DISCRETE CIRCUITS SCHEDULE

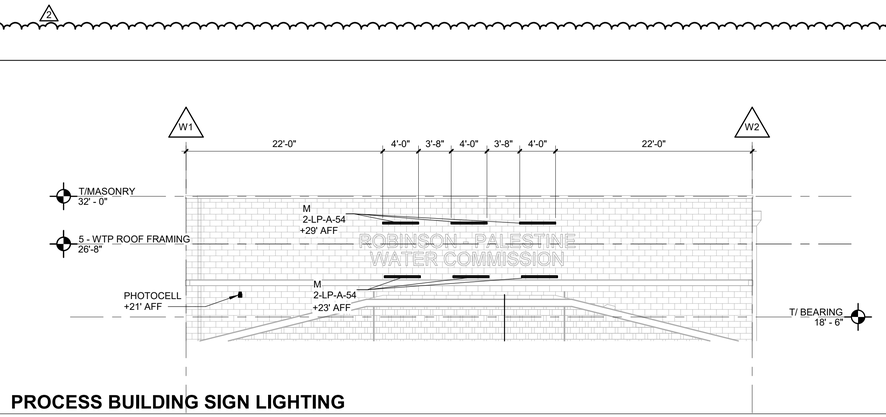
EQUIPMENT INFORMATION			CIRCUIT INFORMATION		CONDUCTOR/CONDUIT INFORMATION		
EQUIPMENT TAG	EQUIPMENT DESCRIPTION	EQUIPMENT LOCATION	CIRCUIT TAG (D-###)	CIRCUIT TYPE (D)	CONDUCTOR	CONDUIT	TO (SOURCE) (D)
LMT-380	OVERFLOW LIMIT SWITCH	GROUND STORAGE TANK INFLUENT	D-LMT380	24 VDC	1/2"C	2#14	MCP
LMT-390	OVERFLOW LIMIT SWITCH	GROUND STORAGE TANK INFLUENT	D-LMT390	24 VDC	1/2"C	2#14	MCP

AREA 2, PROCESS BUILDING POWER CIRCUITS SCHEDULE

EQUIPMENT INFORMATION			POWER CIRCUIT INFORMATION		FEEDER/RACEWAY INFORMATION				EQUIPMENT DISCONNECT	
EQUIPMENT TAG	EQUIPMENT DESCRIPTION	EQUIPMENT LOCATION	CIRCUIT TYPE	ELECTRICAL LOAD	TO (SOURCE)	FEEDER	CONDUIT SIZE	COMMENTS	DISC TYPE	DISC SIZE
PIT-380	GROUND STORAGE TANK #1 PRESSURE (CERABAR PMP21)	GROUND STORAGE TANK INFLUENT	120V 1-PHASE	.15 FLA	2-LP-A	2#12, 1#12G	3/4" C		-	-
PIT-390	GROUND STORAGE TANK #2 PRESSURE (CERABAR PMP21)	GROUND STORAGE TANK INFLUENT	120V 1-PHASE	.15 FLA	2-LP-A	2#12, 1#12G	3/4" C		-	-



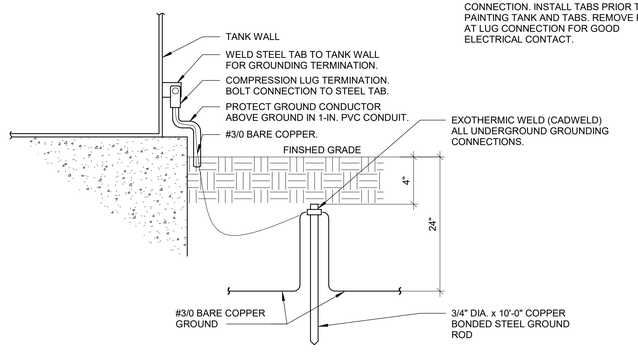
1 GROUND STORAGE TANK DETAIL
SCALE: 1/16" = 1'-0"



3 PROCESS BUILDING SIGN LIGHTING
SCALE: 1/8" = 1'-0"

NOTES:

1. PROVIDE FOUR GROUND ROD CONNECTIONS TO TANK. UNDERGROUND CONDUCTOR SHALL CONNECT TOGETHER ALL GROUND RODS.
2. COORDINATE WITH TANK FABRICATOR TO PROVIDE THE STEEL TABS FOR GROUNDING CONNECTION. INSTALL TABS PRIOR TO PAINTING TANK AND TABS. REMOVE PAINT AT LUG CONNECTION FOR GOOD ELECTRICAL CONTACT.



2 TANK GROUNDING DETAIL
SCALE: NOT TO SCALE

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ISSUE:

#	DATE:	DESCRIPTION:
1	12/19/2025	ADDENDUM 1
2	01/15/2026	ADDENDUM 3

BID SET

PROJECT:
Robinson-Palestine Water Commission

Route 1 Water Treatement Plant

10711 N. State Highway 1
Robinson, IL 62454

DATE:	11/14/2025
DESIGNED:	TJS/DAR
DRAWN:	RCW
REVIEWED:	WRK

SHEET TITLE:
PROCESS BUILDING DETAILS

SHEET NUMBER:
2E6.1

PROJECT NO.: 0210007.00

1/15/2026 3:55:26 PM

GAS FURNACE SCHEDULE

MARK	MANUFACTURER	MODEL	LOCATION	SERVICE	ARRANGEMENT	COND. UNIT MARK	BLOWER					HEATING SECTION			COOLING COIL SECTION							COND. DRAIN SIZE (IN.)	FILTER				ELECTRICAL DATA				PHYSICAL DATA				REMARKS
							CFM	ESP (IN. W.C.)	OA CFM	DRIVE	HP	FUEL	INPUT (MBH)	OUTPUT (MBH)	TYPE	EDB (%%D F)	EWB (%%D F)	LDB (%%D F)	LWB (%%D F)	TTL. CAP. (MBH)	SENS. CAP. (MBH)		TYPE	MERV	THICK. (IN.)	MAX. FACE VEL. (FPM)	V/PH	FLA	MCA	MOCP	L (IN.)	W (IN.)	H (IN.)	WT. (LB.)	
GF1	TRANE	4TXC+S9X1B	MECH. 110	OFFICE BUILDING	VERTICAL	CU1	1150	0.8	180	DIRECT	0.75	NG	80	77.6	DX	76	64	56.5	54.3	33.8	25.1	0.75	PLEATED	8	2	400	120/1	10.3	15	15	18	28	34	127	1
GF2	TRANE	4TXC+S9X1B	MECH. 110	OFFICE BUILDING	VERTICAL	CU2	1150	0.8	190	DIRECT	0.75	NG	80	77.6	DX	76	64	56.5	54.3	33.8	25.1	0.75	PLEATED	8	2	400	120/1	10.3	15	15	18	28	34	127	1
GF3	TRANE	4TXC+S9X1B	MECH. 111	OFFICE BUILDING	VERTICAL	CU3	1150	0.8	180	DIRECT	0.75	NG	80	77.6	DX	76	64	56.5	54.3	33.8	25.1	0.75	PLEATED	8	2	400	120/1	10.3	15	15	18	28	34	127	1

NOTES: 1.CONDENSATE NEUTRALIZATION KIT FOR CONDENSING FURNACE.

ENERGY RECOVERY VENTILATOR SCHEDULE

MARK	MANUFACTURER	MODEL	LOCATION	SERVICE	ARRANGEMENT	OUTDOOR AIR FAN				EXHAUST AIR FAN					ENERGY RECOVERY						FILTER				ELECTRICAL DATA			PHYSICAL DATA				REMARKS
						CFM	ESP (IN. W.C.)	WATTS	FLA	CFM	ESP (IN. W.C.)	WATTS	HP	FLA	OUTDOOR AIR CFM	EXHAUST AIR CFM	SUMMER LDB (%%D F)	SUMMER LWB (%%D F)	WINTER LDB (%%D F)	WINTER LWB (%%D F)	TYPE	MERV	THICK. (IN.)	MAX. FACE VEL. (FPM)	V/PH	MCA	MOCP	L (IN.)	W (IN.)	H (IN.)	WT. (LB.)	
ERV1	RENEWAIRE	HE10-JINH	MECH 110	OFFICE BLDG.	HORIZONTAL	550	1	221	1.73	500	1	189	0.11	1.73	550	500	79.8	69	50.2	39.5	PLEATED	8	2	400	208/1	3.9	15	50	44	22	280	1

NOTES: 1. CEILING MOUNTING KIT.
2. MANUFACTURER MOTORIZED DAMPERS

ROOF HOOD GRAVITY INTAKE VENTILATOR...

MARK	MANUFACTURER	MODEL	SERVICE	TYPE	CFM	PRESSURE DROP (IN. W.C.)	THROAT			REMARKS
							D (IN.)	AREA (SF)	VEL. (FPM)	
RH1	GREENHECK	GRSI-12	ERV-1	INTAKE	550	0.08	12.5	0.82	670	1-3
RH2	GREENHECK	GRSI-8	SF-2	INTAKE	210	0.06	8.25	0.37	600	1-4

NOTES: 1.FLASHING FLANGE
2.INTEGRAL BIRDSCREEN.
3.EXTERIOR COLOR BLACK.
4.MOTORIZED DAMPER INTERLOCKED TO EF-3.

DUCTLESS SPLIT UNIT SCHEDULE

INDOOR UNIT											OUTDOOR UNIT									REMARKS
MARK	MANUFACTURER	MODEL	LOCATION	CFM		CAP. (MBH)	ELECTRICAL DATA		PHYSICAL DATA								ELECTRICAL DATA			PHYSICAL DATA				
				LOW	HIGH	COOL	V/PH	MOCP	L (IN.)	W (IN.)	H (IN.)	WT. (LB.)	MARK	MANUFACTURER	MODEL	LOCATION	NOM. CAP. (TONS)	V/PH	MCA	MOCP	L (IN.)	W (IN.)	H (IN.)	WT. (LB.)	
DSU1	TRANE	TPKA0A0121LA10A	OFFICE BLD	215	375	12.0	208/1	15	35	10	12	28	CU4	TRANE	TRUYA0121KA70NA	OFFICE BLD	1	208/1	11	30	31	12	24	92	1,2
DSU2	TRANE	TPKA0A01181LA10A	WTP	215	375	18.0	208/1	15	35	10	12	28	CU5	TRANE	TRUZA0181KA70NA	WTP	1.5	208/1	11	30	31	12	24	92	1,2

NOTES: 1. PROVIDE AND INSTALL DIVERSITECH CONDENSATE PUMP.
2. FURNISH AND INTSALL 7 DAY PROGRAMMABLE THERMOSTAT. THE UNIT SHALL RUN CONTINOUSLY TO MAINTAINT THE SPACE TEMPERATURE AT A SET POINT INITIALLY SET TO 70 DEG. F. (ADJ.).

ELECTRIC UNIT HEATER SCHEDULE

MARK	MANUFACTURER	MODEL	LOCATION	FAN		TOTAL CAP. (MBH)	ELECTRICAL DATA			PHYSICAL DATA				REMARKS
				CFM	HP		KW	V/PH	FLA	L (IN.)	W (IN.)	H (IN.)	WT. (LB.)	
EH1	CHROMALOX	HD3D-200	CHEMICAL ROOM 203	405	1/15	6.8	2	208/1	10	13	15	24	45	1
EH2	CHROMALOX	HD3D-300	CL2 ROOM	405	1/15	10.2	3	208/1	15	13	15	24	45	1

NOTES: 1. FACTORY INTERGRAL THERMOSTAT.

PACKAGED TERMINAL AIR CONDITIONER SCHEDULE

MARK	MANUFACTURER	MODEL	LOCATION	AIRFLOW (CFM)			COOLING			HEAT PUMP HEATING		ELECTRIC HEATING		ELECTRICAL DATA		PHYSICAL DATA				REMARKS
				LOW	HIGH	MIN. OA	TOTAL CAP. (MBH)	REFRIGERANT	EER	TOTAL CAP. (MBH)	COP	TOTAL CAP. (MBH)	KW	V/PH	MCA	D (IN.)	W (IN.)	H (IN.)	WT (LB.)	
PTAC1	AMANA	PTH153K35D	OFFICE/LAB 201	314	400	80	14.2	R410A	9.9	13.9	3	11.9	3.5	208/1	20	21	42	16	113	1,2

NOTES: 1.WALL MOUNTED DIGITAL THERMOSTAT, AUTO CHANGEOVER, PROGRAMMABLE, 2 SPEED FAN, 2 STAGE COOL, 2 STAGE HEAT.
2.POWER DOOR.

CEILING FAN SCHEDULE

MARK	MANUFACTURER	MODEL	LOCATION	FINISH	CFM	ELECTRICAL DATA					WT. (LB.)	REMARKS
						HP	V/PH	FLA	MCA	MOCP		
CF1	GREENHECK	SP-LP0511-1	RESTROOM 201A	WHITE	150	-	115/1	0.46	0.6	15	10	1
CF2	GREENHECK	DS-3-10	STORAGE 109	BLACK	23121	0.75	460/3	2.5	-	-	135	2,4
CF3	GREENHECK	DS-3-8	PROCESS 205	BLACK	11600	0.75	460/3	2.5	-	-	131	2,3
CF4	GREENHECK	DS-3-8	PROCESS 205	BLACK	11600	0.75	460/3	2.5	-	-	131	2,3
CF5	GREENHECK	DS-3-8	STORAGE 109	BLACK	11600	0.75	460/3	2.5	-	-	131	2,4
CF6	HUGH	FPS8355BMWW	OFFICE 111	WHITE	5104	-	120/1	2.3	-	-	16.5	5,6,7
CF7	HUGH	FPS8355BMWW	OFFICE 112	WHITE	5104	-	120/1	2.3	-	-	16.5	5,6,7
CF8	HUGH	FPS8355BMWW	WORKERS AREA 107	WHITE	5104	-	120/1	2.3	-	-	16.5	5,6,7
CF9	HUGH	FPS8355BMWW	CONF. ROOM 116	WHITE	5104	-	120/1	2.3	-	-	16.5	5,6,7
CF10	HUGH	FPS8355BMWW	MANAGER 118	WHITE	5104	-	120/1	2.3	-	-	16.5	5,6,7
CF11	HUGH	FPS8355BMWW	OFFICE/LAB 201	WHITE	5104	-	120/1	2.3	-	-	16.5	5,6,7
CF12	GREENHECK	DS-3-8	PROCESS 207	BLACK	11600	0.75	460/3	2.5	-	-	131	2,3
CF13	GREENHECK	DS-3-8	PROCESS 207	BLACK	11600	0.75	460/3	2.5	-	-	131	2,3

NOTES: 1.INTERLOCK WITH WALL LIGHT SWITCH
2.GREENHECK STANDARD TOUCHSCREEN CONTROL BOX. PROVIDE AND INSTALL CONTROL WIRE FROM FAN TO CONTROL BOX.
3. 5' DROP LENGTH
4. 4' DROP LENGTH
5. MOUNT FAN WALL SWITCH NEXT TO LIGHT
6. MOUNT TO TRUSS SHOP DWGS. DO NOT MOUNT ON DROP CEILING BLADE HEIGHT 8'-6"
7. ALTERNATE MANUFACTURER AND MODEL ARE ACCEPTABLE, PROVIDED THE FAN MEETS OR EXCEEDS ALL SCHEDULE PERFORMANCE, ELECTRICAL, DIMENSIONAL, AND FINISH REQUIREMENTS. CONTRACTOR SHALL SUBMIT CUT SHEETS FOR REVIEW PRIOR TO SUBSTITUTION.

EXHAUST FAN SCHEDULE

MARK	MANUFACTURER	MODEL	TYPE	DRIVE	SERVICE	CFM	TSP (IN. W.C.)	FAN MOTOR BHP	SONES	DAMPER	ELECTRICAL DATA					PHYSICAL DATA			REMARKS
											HP	V/PH	FLA	MCA	MOCP	L (IN.)	W (IN.)	H (IN.)	
EF1	GREENHECK	CUBE-160	WALL MOUNTED	DIRECT	STORAGE AREA 109	2175	0.3	0.42	11.2	MOTORIZED	0.5	208/3	2.4	3	15	29	29	22	1,3
EF2	GREENHECK	CUBE-160	WALL MOUNTED	DIRECT	STORAGE AREA 109	2175	0.3	0.42	11.2	MOTORIZED	0.5	208/3	2.4	3	15	29	29	22	1,3
EF3	FANAM	CBI	CBI-200	DIRECT	CHEMICAL ROOM 203	210	1	-	67	MOTORIZED	0.25	208/1	2.6	5	10	24	28	20	1,3
EF4	FANAM	CBI	CBI-280	DIRECT	CL2 ROOM 202	2850	0.8	-	67	MOTORIZED	3	208/1	19.8	25	25	24	28	20	1,3
EF5	GREENHECK	AER-24	PROPELLER	DIRECT	PROCESS ROOM 205	5900	0.2	0.49	15.2	MOTORIZED	0.5	208/1	5.4	6.8	15	38	38	1.5	1,3,4,5,6
EF6	GREENHECK	AER-24	PROPELLER	DIRECT	PROCESS ROOM 205	5900	0.2	0.49	15.2	MOTORIZED	0.5	208/1	5.4	6.8	15	38	38	1.5	1,3,4,5,6
EF7	GREENHECK	AER-24	PROPELLER	DIRECT	PROCESS ROOM 205	5900	0.2	0.49	15.2	MOTORIZED	0.5	208/1	5.4	6.8	15	38	38	1.5	1,3,4,5,6
EF8	GREENHECK	CUE-100-VG	UPBLAST	DIRECT	PROCESS ROOM 205	350	0.2	0.02	0.5	MOTORIZED	0.25	208/1	3.8	4.8	15	25	25	40	1,2,3
EF9	GREENHECK	AER-24	PROPELLER	DIRECT	PROCESS ROOM 207	7400	0.3	1.28	30	MOTORIZED	1.5	208/1	11	13.8	20	38	38	1.5	1,3,4,5,6
EF10	GREENHECK	AER-24	PROPELLER	DIRECT	PROCESS ROOM 207	7400	0.3	1.28	30	MOTORIZED	1.5	208/1	11	13.8	20	38	38	1.5	1,3,4,5,6
EF11	GREENHECK	CUE-90-VG	WALL MOUNTED	DIRECT	PROCESS ROOM 207	295	0.3	0.03	4.7	MOTORIZED	0.17	208/1	1.5	1.9	15	19	19	22	1,3

NOTES: 1.DISCONNECT SWITCH.
2.12" ROOF CURB. CURB TO FOLLOW ROOF SLOPE.
3.MOTORIZED BACKDRAFT DAMPER.
4. ALUMINUM BLADES
5. WALL HOUSING WITH GUARD.
6. 45DEG WEATHERHOOD KIT.

ELECTRIC HEATING COIL SCHEDULE

MARK	MANUFACTURER	MODEL	LOCATION	SERVICE	CFM	MIN. FACE VELOCITY (FPM)	TOTAL CAP. (MBH)	KW / SF OF FACE AREA	KW	CONTROL STAGES	ELECTRICAL DATA		REMARKS
											V/PH	FLA	
EHC-1	GREENHECK	IDHE 12*12	INLINE DUCT	CHEMICAL ROOM 203	210	200	12	3.5	3.5	SCR	480/1	7.5	1,3,4
EHC-2	GREENHECK	IDHE 24*24	INLINE DUCT	CL2 ROOM 202	2850	600	153	9.6	45.0	SCR	480/3	93	2,3,4

NOTES: 1. INTERLOCK WITH SF-1.
2. INTERLOCK WITH SF-2.
3. DUCT THERMOSTAT WITH VERNIER SCR CONTROL
4. STAINLESS STEEL HARDWARE

LOUVER SCHEDULE

MARK	MANUFACTURER	MODEL	SERVICE	CFM	FREE AREA (SF)	MAX. AIR P.D. (IN. W.C.)	MATERIAL	FINISH	PHYSICAL DATA			REMARKS
									D (IN.)	W (IN.)	H (IN.)	
L1	GREENHECK	ESD-635	STORAGE 109	2175	5.2	0.03	ALUMINUM	PAINTED	6	48	32	1,2
L2	GREENHECK	ESD-635	STORAGE 109	2175	5.2	0.03	ALUMINUM	PAINTED	6	48	32	1,2
L3	GREENHECK	ESD-635	MECH 110	550	0.8	0.07	ALUMINUM	PAINTED	6	18	18	1,2
L4	GREENHECK	ESD-635	MECH 110	500	0.8	0.07	ALUMINUM	PAINTED	6	18	18	1,2
L5	GREENHECK	ESD-635	OFFICE/LAB 201	2700	3.8	0.08	ALUMINUM	PAINTED	6	32	32	1,2
L6	GREENHECK	ESD-635	PROCESS ROOMS	5900	7.9	0.08	ALUMINUM	PAINTED	6	48	40	1,2
L7	GREENHECK	ESD-635	PROCESS ROOM 205	350	0.5	0.06	ALUMINUM	PAINTED	6	16	16	1,2
L8	GREENHECK	ESD-635	PROCESS ROOM 207	7400	9.4	0.1	ALUMINUM	PAINTED	6	48	48	1,2

NOTES: 1. MOTORIZED DAMPER.
2. SEE ARCHITECTRURAL FOR FINISH.

AIR DEVICE SCHEDULE

MARK	MANUFACTURER	MODEL	SERVICE	STYLE	FACE SIZE	FRAME	FINISH	MATERIAL	REMARKS
S1	TITUS	OMNI	SUPPLY	PLAQUE	24x24	LAY-IN	WHITE	ALUMINUM	1
S2	TITUS	300RS-SS	SUPPLY	GRILLE	24X24	SURFACE	CUSTOM	STAINLESS STEEL	2
R1	TITUS	50F	RETURN	EGGCRATE	24x24	LAY-IN	WHITE	ALUMINUM	1
R2	TITUS	50F	RETURN	EGGCRATE	12X24	LAY-IN	WHITE	ALUMINUM	2
R3	TITUS	350RL	RETURN	GRILLE	8X8	DUCT MTD	WHITE	ALUMINUM	3
E1	TITUS	350RL	EXHAUST	GRILLE	24X24	SURFACE	WHITE	ALUMINUM	1,2
E2	TITUS	350RL	EXHAUST	GRILLE	12x24	SURFACE	WHITE	ALUMINUM	1
E3	TITUS	350RL	EXHAUST	GRILLE	12x12	SURFACE	WHITE	ALUMINUM	2

NOTES: 1. CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH REFLECTED CEILING PLAN.
2. PROVIDE TITUS "RAPID MOUNT" FRAMES AT GYPSUM CEILINGS.
3. OPPOSED BLADE DAMPER

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ISSUE:

#	DATE:	DESCRIPTION:
1	01/29/2026	ADDENDUM-03

BID SET
NOT FOR CONSTRUCTION

PROJECT:

Robinson-Palestine Water Commission

Water Treatment Plant and Campus

10711 N. State Highway 1
Robinson, IL 62454

DATE: 11/14/2025
DESIGNED: DAH/AK
DRAWN: SHR
REVIEWED: TK

SHEET TITLE:

SCHEDULES

SHEET NUMBER:

GM6.1

PROJECT NO.: 0210007.00

12/9/2025 9:54:42 AM

BID FORM FOR CONSTRUCTION CONTRACT

The terms used in this Bid with initial capital letters have the meanings stated in the Instructions to Bidders, the General Conditions, and the Supplementary Conditions.

Project No. 0210007.00
Water Treatment Plant and Campus

Division A: Water Treatment Plant and Campus
Division B: Ground Storage Tanks
Division C: Underground Piping

ARTICLE 1—OWNER AND BIDDER

1.01 This Bid is submitted to: **Robinson-Palestine Water Commission**
ATTN: Jason Wesner
108 E. Poplar
Robinson, IL 62454

1.02 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with Owner in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

ARTICLE 2— BIDDER'S ACKNOWLEDGEMENTS

2.01 Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for 30 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

1. Contractor must review the following table and initial next to each item to show the Contractor understands the specific requirements and what is expected. **Failure to initial next to each item may result in rejection of bid.**

#	ITEM	INTITALS
1.	Installation of the utilities shall be the Contractors responsibility to locate or have located all utilities being crossed, connected to, or otherwise impacted. It shall be required to locate these utilities regardless of the installation method utilized for the proposed utilities. Utilities crossed by Horizontal Directional Drilling shall also be located and exposed by the Contractor. It shall be the Contractor's responsibility to repair any damaged utility and for any damage to property, private or public associated with damaged utilities, during the installation of the water main.	
2.	All bidders to undertake specified efforts at least sixteen (16) days prior to bid opening for advertisement regarding DBE's. Certificate of publication of said advertisement must be included in bidding documents. Advertisement MUST be in DAILY regional newspaper, Dodge Report, or approved equivalent.	
3.	Bidding Contractor shall provide written acknowledgement that they will self-perform a minimum of thirty percent (30%) of all labor (manhours) on this project.	

ARTICLE 3—BASIS OF BID—LUMP SUM BID AND UNIT PRICES

3.01 ~~*Unit Price Bids*~~

3.02 *Lump Sum Bids*

A. Bidder will complete the Work in accordance with the Contract Documents for the following lump sum (stipulated) price(s)

BASE BID

Division A: Water Treatment Plant and Campus

Division A includes a new 1,800 gallon per minute filtration and Per- and Polyfluoroalkyl (PFAS)removal water treatment plant with related site improvements and accessories; sitework, concrete and gravel paving, seeding, associated pumps, piping, valves, meters, structures, head tank, chemical storage, feed equipment, electrical work, plumbing, HVAC, instrumentation and controls, radio telemetry, and related accessories and appurtenances as specified and shown on the plan drawings. Electrical work includes outside conduits, feeders, and light poles. The work shall include all labor, supervision, materials, supplies, transportation, equipment, and services necessary and required to perform the project as set forth in the Contract Documents. Buildings include the office building with maintenance shop area, cold storage, and water treatment plant. Division A includes all work not defined in Division B and C.

Division A Supplemental Bid #1:

Gas Service Lump Sum Total: $100,000

Division A Supplemental Bid #2:

Electrical Service Lump Sum Total: $150,000

Division A Base Bid Total:_____

Division A Lump Sum Total: _____($_____)

Division B: Ground Storage Tanks

Division B includes two (2) one million gallons (1,000,000 gallons) ground storage tanks. Work includes site grading, earthwork, foundation, steel erection, and coating. Foundation/concrete work to include valve vault, valve(s), and piping extend outside of the vault or foundation shall be included. Electrical conduits, conductors, and pressure sensors are not included in the contract.

Division B Lump Sum Total: _____($_____)

Division C: Underground Piping

Division C includes all underground water main, water services, sanitary sewer, and storm sewer within 5' of the building/structure or foundation. In addition to the water main, all manhole structures (excluding the head tank) shall be included. Fire hydrants to flush the head tank shall be included in Division C work. This work includes the conversion of the raw water main to finish water main. This will require multiple mobilization to connect, disconnect, tap and plug the water mains.

Division C Lump Sum Total: _____($_____)

Deduct for the award of Multiple Divisions to a single contractor:

Division A and **Division B**:

_____($_____)

Division A and **Division C**:

_____($_____)

Division B and **Division C**:

_____($_____)

Division A, **Division B,** and **Division C**:

_____($_____)

Total Base Bid (Division A, B, & C) Plus Equipment Manufacturer Alternative

_____($_____)

The Bidder shall provide a list of Subcontractors, Suppliers, individuals or entities for the various subcontract portions of work and major equipment items as specified:

Subcontract or Equipment Specification Section	General Description	Subcontractor, Supplier, individual, or entities
Site Civil Subcontract	General site work, excavation, earthwork, seeding, etc.	
Building Subcontract	Building Construction	
	Roofing Construction	
Concrete Subcontract	Cast-in-place concrete construction including foundations, access roads and driveways, etc.	
Mechanical Subcontract	Piping inside and outside buildings and structures, underground and exposed piping, plumbing equipment, accessories, process piping, piping insulation, etc.	
HVAC Subcontract	Heating and ventilating system, air conditioning, temperature control system for WTP building	
Electrical Subcontract	Electric power distribution, lighting, control wiring and conduits	
Painting Subcontract	Building and Equipment to be painted on site	
Instrumentation & Controls Subcontract	Panel Fabricator (MCP and LCPs)	
	Radio System Supplier	
	Network Consultant	

ARTICLE 4—BIDDER'S CERTIFICATION

4.01 Bidder certifies that:

A. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation;

B. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid;

C. Bidder has not solicited or induced any individual or entity to refrain from bidding; and

D. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 4.01.D:

"corrupt practice" means the offering, giving, receiving, or soliciting of any thing of value likely to influence the action of a public official in the bidding process;

"fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;

"collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels; and

"coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the e execution of the Contract.

4.02 BIDDER certifies that wages paid in connection with the PROJECT shall be paid at prevailing rates not less than those prevailing under the Davis-Bacon Wage Act (40 USC 3141 through 3148) as defined by the Department of Labor. Bidder further certifies that the provisions contained in the following clauses will be exercised in the performance of any contract resulting from this BID and are made a part of the CONTRACT DOCUMENTS thereto by their inclusion in the BID as follows:

4. "Minimum wages.

i) All laborers and mechanics employed or working upon the site of the work will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (a)(1)(iv) of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in § 5.5(a)(4). Laborers or mechanics performing work in more than one

classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, that the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph (a)1(ii) of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

Sub recipients may obtain wage determinations from the U.S. Department of Labor's web site, www.sam.gov.

ii) (A) The sub recipient, on behalf of USEPA, shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The USEPA award official shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

5. The work to be performed by the classification requested is not performed by a classification in the wage determination; and

3. The classification is utilized in the area by the construction industry; and

4. The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

B. If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the sub recipient agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the sub recipient to IEPA. IEPA will transmit the report, to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify or disapprove every additional classification action within 30 days of receipt and will so advise IEPA or will notify IEPA within the 30- day period that additional time is necessary.

C. In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the sub recipient do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the award official shall refer the questions, including the views of all interested parties and the recommendation of the award official, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

D. The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs (a)(1)(ii)(B) or (C) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

iii) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

i) If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program. Provided, that the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

2. Withholding, the sub recipient shall upon written request of the USEPA Award Official or an authorized representative of the Department of Labor withhold or cause to be withheld from the contractor under this contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the (Agency) may, after written notice to the contractor, sponsor, applicant, or owner, take such actions as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

3. Payrolls and basic records.

i) Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in

providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

E. The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the sub recipient, that is, the entity that receives the sub-grant or loan from IEPA. Such documentation shall be available on request of IEPA or USEPA. As to each payroll copy received, the sub recipient shall provide written confirmation indicating whether or not the project is in compliance with the requirements of 29 CFR 5.5(a)(1) based on the most recent payroll copies for the specified week. The payrolls shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on the weekly payrolls. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). Form WH-347 is available for this purpose from the Wage and Hour Division Web site at http://www.dol.gov/whd/forms/index.htm or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the sub recipient for transmission to IEPA or USEPA, if requested, for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the sub recipient.

F. Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

1. That the payroll for the payroll period contains the information required to be provided under § 5.5 (a)(3)(ii) of Regulations, 29 CFR Part 5, the appropriate information is being maintained under § 5.5 (a)(3)(i) of Regulations, 29 CFR Part 5, and that such information is correct and complete

2. That each laborer and mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR Part 3;

3. That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

G. The weekly submission of a properly executed certification set forth on the reverse side of optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph (a)(3)(ii)(B) of this section.

H. The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

iii) The contractor or subcontractor shall make the records required under paragraph (a)(3)(i) of this section available for inspection, copying, or transcription by authorized representatives of IEPA, USEPA or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the Federal agency or IEPA may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

4. Apprentices and trainees –

i) Apprentices. Apprentices will be permitted to work at less than predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be

paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

ii) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

iii) Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR Part 3, which are incorporated by reference in this contract.

6. Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses contained in 29 CFR 5.5(a)(1) through (10) and such other clauses as the USEPA determines may be appropriate, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

7. Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

9. Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and sub recipients, IEPA, USEPA, the U.S. Department of Labor, or the employees or their representatives.

10. Certification of eligibility.

    i) By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

    ii) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

    iii) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

11. Contract Provision for Contracts in Excess of $100,000

    b. Contract Work Hours and Safety Standards Act. The sub recipient shall insert the following clauses set forth in paragraphs (a)(1), (2), (3), and (4) of the section in full in any contract in an amount in excess of $100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by Item 3, above or 29 CFF 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

12. Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics

shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

13. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (b)(1) of this section the contractor and any subcontractor responsible therefore shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clauses set forth in paragraph (b)(1) of this section, in the sum of $10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (b)(1) of this section.

14. Withholding for unpaid wages and liquidated damages. The sub recipient, upon written request of the USEPA Award Official or an authorized representative of the Department of Labor, shall withhold or cause to be withheld, form any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract su7bject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (b)(2) of this section.

15. Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (b)(1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (b)(1) through (4) of this section.

    b. In addition to the clauses contained in Item 3, above, in any contract subject only to the Contract Work Hours and Safety Standards Act and not to any of the other statutes cited in 29 CFR 5.1, the Sub recipient shall insert a clause requiring that the contractor or subcontractor shall maintain payrolls and basic payroll records during the course of the work and shall preserve them for a period of three years from the completion of the contract for all laborers and mechanics, including guards and watchmen, working on the contract. Such records shall contain the name and address of each such employee, social security number, correct classifications, hourly rates of wages paid, daily and weekly number of hours worked, deductions made, and actual wages paid. Further, the Sub recipient shall insert in any such contract a clause providing that the records to be maintained under this paragraph shall be made available by the contractor or subcontractor for inspection, copying, or transcription by authorized representatives of the IEPA, USEPA and the Department of Labor, and the contractor or subcontractor will permit such representatives to interview employees during working hours on the job

16. Compliance Verification

    a. The sub recipient shall periodically interview a sufficient number of employees entitled to DB prevailing wages (covered employees) to verify that contractors or subcontractors are paying the appropriate wage rates. As provided in 29 CFR 5.6(a)(6), all interviews must be conducted in confidence. The sub recipient must use Standard Form 1445 or equivalent documentation to memorialize the interviews. Copies of the SF 1445 are available from USEPA on request.

    b. The sub recipient shall establish and follow an interview schedule based on its assessment of the risks of noncompliance with DB posed by contractors or subcontractors and the duration of the contract or subcontract. At a minimum, the sub recipient must conduct interviews with a representative group of covered employees within two weeks of each contractor or subcontractor's submission of its initial weekly payroll data and two weeks prior to the estimated completion date for the contract or subcontract. Sub recipients must conduct more frequent interviews if the initial interviews or other information indicates that there is a risk that the contractor or subcontractor is not complying with DB. Sub recipients shall immediately conduct necessary interviews in response to an alleged violation of the prevailing wage requirements. All interviews shall be conducted in confidence.

    c. The sub recipient shall periodically conduct spot checks of a representative sample of weekly payroll data to verify that contractors and subcontractors are paying the appropriate wage rates. The sub recipient shall establish and follow a spot check schedule based on its assessment of the risks of noncompliance with DB posed by contractors or subcontractors and the duration of the contract or subcontract. At a minimum, the sub recipient must spot check payroll data within two weeks of each contractor or subcontractor's submission of its initial payroll data and two weeks prior to the completion date the contract or subcontract. Sub recipients must conduct more frequent spot checks if the initial spot check or other information indicates that there is a risk that the contractor or subcontractor is not complying with DB. In addition, during the examinations the sub recipient shall verify evidence of fringe benefit plans and payments thereunder by contractors and subcontractors who claim credit for fringe benefit contributions.

    d. The sub recipient shall periodically review contractors and subcontractors use of apprentices and trainees to verify registration and certification with respect to apprenticeship and training programs approved by either the U.S. Department of Labor or a state, as appropriate, and that contractors and subcontractors are not using disproportionate numbers of, laborers, trainees and apprentices. These reviews shall be conducted in accordance with the schedules for spot checks and interviews described in Item 5(b) and (c) above.

    e. Subrecipients must immediately report potential violations of the DB prevailing wage requirements to the USEPA DB contact listed above and to the appropriated DOL Wage and Hour District Office listed at http://www.dol.gov/whd".

4.03 By submission of the bid, each bidder certifies, and in the case of a joint bid each party thereto certifies as to his own organization, that in connection with the bid:

A. The prices in the bid have been arrived at independently, without consultation, communication, or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other bidder or with any competitor;

B. Unless otherwise required by law, the prices which have been quoted in the bid have not knowingly been disclosed by the bidder, prior to opening, directly or indirectly to any other bidder or to any competitor; and

C. No attempt has been made or will be made by the bidder to induce any other person or firm to submit or withhold a bid for the purpose of restricting competition.

4.04 Each person signing the bid shall certify that:

A. He is the person in the bidder's organization responsible within that organization for the decision as to the prices being bid and that he has not participated, and will not participate, in any action contrary to 4.03.A through 4.03.C above; or

B. He is not the person in the bidder's organization responsible within that organization for the decision as to the prices being bid but that he has been authorized to act as agent for the persons responsible for such decision in certifying that such persons have not participated, and will not participate, in any action contrary to 4.03.A through 4.03.C above, and as their agent shall so certify; and shall also certify that he has not participated, and will not participate, in any action contrary to 4.03.A through 4.03.C above

ARTICLE 5— ATTACHMENTS TO THIS BID

5.01 The following documents are submitted with and made a condition of this Bid:

A. Required Bid security in the form of a 5% Bid Bond;

B. List of Proposed Subcontractors, Suppliers, individuals or entities proposed for the work as required above and referenced in Article 7.06 of the Supplementary Conditions;

C. Required Signed and Executed Equipment Manufacturer Program Certification, page 000640-1

D. Required Bidder Qualification Statement with supporting data

E. Bidding Contractor shall provide written acknowledgement that they will self-perform a minimum of thirty percent (30%) of all labor (manhours) on this project;

F. List of Project References including specific contact names, valid and working contact phone number and e-mail address. References will be contacted for the low bidders as deemed appropriate by the Engineer;

G. Bidder Certification in Compliance with Article 33E to the "Criminal Code of 2012", page 0650-21;

H. Certification of Non-Segregated Facilities, page 0650-13;

I. Notice to Labor Unions or Other Organization of Workers Nondiscrimination in Employment, submit one for each labor union that Contractor has contracts with, page 0650-14;

J. Certification Regarding Debarment, page 0650-15;

K. Requirements for Disadvantaged Business Enterprise Participation, pages 0675-1 to 0675-15;

L. Bidder Certification for Advertisement Regarding Subcontracting Opportunities for Disadvantaged Businesses, page 0675-16;

M. Bidder Certification Regarding the Use of American Iron and Steel Products, page 0680-1;

N. Evidence of authority to do business in the State of Illinois; Contractor shall submit a Certificate of Good Standing from the Illinois Secretary of State website. http://www.ilsos.gov/corporatellc/;

O. Required Bidder Qualification Statement with supporting data;

P. Written acknowledgment of Illinois Compiled Statutes, 1992, ACT 570 Employment of Illinois Workers on Public Works Act;

Q. Written acknowledgement of Illinois Public Act 93-0642, which amends the Illinois Procurement Code;

R. Certification of Employment of Illinois Workers on Public Works Act, page 0685-1;

S. Illinois Works Jobs Program Act Apprenticeship Initiative Contractor Certification, page 0685-7

T. The failure to include any listed attachments with a bid proposal is sufficient cause for bid rejection. The omission of any listed attachment will require, at the least, more intense evaluation of the bid. Bidders shall review all hard copy submissions to assure that all listed attachments are included.

ARTICLE 6—TIME OF COMPLETION

6.01 Bidder agrees that the Work will be substantially complete and will be completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before the dates or within the number of calendar days indicated in the Agreement.

6.02 Bidder accepts the provisions of the Agreement as to liquidated damages.

ARTICLE 7—BIDDER'S ACKNOWLEDGEMENTS: ACCEPTANCE PERIOD, INSTRUCTIONS, AND RECEIPT OF ADDENDA

7.01 *Bid Acceptance Period*

A. This Bid will remain subject to acceptance for 90 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

7.02 *Instructions to Bidders*

A. Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security.

7.03 *Receipt of Addenda*

A. Bidder hereby acknowledges receipt of the following Addenda:

Addendum Number	Addendum Date

ARTICLE 8—BIDDER'S REPRESENTATIONS AND CERTIFICATIONS

8.01 *Bidder's Representations*

A. In submitting this Bid, Bidder represents the following:

1. Bidder has examined and carefully studied the Bidding Documents, including Addenda.
2. Bidder has visited the Site, conducted a thorough visual examination of the Site and adjacent areas, and become familiar with the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
3. Bidder is familiar with all Laws and Regulations that may affect cost, progress, and performance of the Work.
4. Bidder has carefully studied the reports of explorations and tests of subsurface conditions at or adjacent to the Site and the drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, with respect to the Technical Data in such reports and drawings.
5. Bidder has carefully studied the reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, with respect to Technical Data in such reports and drawings.
6. Bidder has considered the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the Technical Data identified in the Supplementary Conditions or by definition, with respect to the effect of such information, observations, and Technical Data on (a) the cost, progress, and performance of the Work; (b) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, if selected as Contractor; and (c) Bidder's (Contractor's) safety precautions and programs.
7. Based on the information and observations referred to in the preceding paragraph, Bidder agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.
8. Bidder is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents.
9. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and of discrepancies between Site conditions and the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.

10. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

11. The submission of this Bid constitutes an incontrovertible representation by Bidder that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

8.02 *Bidder's Certifications*

A. The Bidder certifies the following:

1. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation.

2. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid.

3. Bidder has not solicited or induced any individual or entity to refrain from bidding.

4. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 8.02.A:

a. Corrupt practice means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process.

b. Fraudulent practice means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition.

c. Collusive practice means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels.

d. Coercive practice means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

BIDDER hereby submits this Bid as set forth above:

Bidder:

_____

(typed or printed name of organization)

By: _____

(individual's signature)

Name: _____
(typed or printed)

Title: _____
(typed or printed)

Date: _____
(typed or printed)

If Bidder is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.

Attest: _____
(individual's signature)

Name: _____
(typed or printed)

Title: _____
(typed or printed)

Date: _____
(typed or printed)

Address for giving notices:

_____

_____

Bidder's Contact:

Name: _____
(typed or printed)

Title: _____
(typed or printed)

Phone: _____

Email: _____

Address:

_____

_____

_____

Bidder's Contractor License No.: (if applicable) _____

DIVISION 9 - FINISHES
SECTION 099600 - HIGH-PERFORMANCE COATINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions, Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes surface preparation and application of high-performance coating systems.

B. Related Requirements:

1. Section 033000 – Cast-in-Place Concrete
2. Section 042000 – Unit Masonry
3. Division 05 – Metals
4. Division 08 – Openings
5. Division 23 – Heating, Ventilating, and Air Conditioning
6. Division 26 – Electrical
7. Division 40 – Process Integration
8. Division 43 – Process Gas and Liquid Handling, Purification and Storage Equipment
9. Division 46 – Process Equipment

1.3 DEFINITIONS

A. Gloss Level 6: 70 to 85 units at 60 degrees, according to ASTM D 523.

B. Gloss Level 7: More than 85 units at 60 degrees, according to ASTM D 523.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product indicated. Include preparation requirements and application instructions.

B. Samples for Initial Selection: For each type of topcoat product indicated.

C. Samples for Verification: For each type of coating system and in each color and gloss of topcoat indicated.

1. Submit Samples on rigid backing, 8 inches square.
2. Step coats on Samples to show each coat required for system.
3. Label each coat of each Sample.
4. Label each Sample for location and application area.

D. Product List: For each product indicated, include the following:

1. Cross-reference to paint system and locations of application areas. Use same designations indicated on Drawings and in schedules.
2. VOC content.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F.

1. Maintain containers in clean condition, free of foreign materials and residue.
2. Remove rags and waste from storage areas daily.

1.6 FIELD CONDITIONS

A. Apply coatings only when temperature of surfaces to be coated and surrounding air temperatures are between 50 and 95 deg F.

B. Do not apply coatings when relative humidity exceeds 85 percent; at temperatures less than 5 deg F above the dew point; or to damp or wet surfaces.

C. Do not apply exterior coatings in snow, rain, fog, or mist.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Tnemec Inc.
2. Owner approved equal.

B. Requests for substitution shall include manufacturer’s technical data sheets for each product giving descriptive information, solids by volume, recommended dry film thickness, a list of five similar projects, with contact person, where each product has been used and rendered satisfactory service for at least three years.

C. Material Quality: Provide manufacturer’s highest grade of the various high-performance coatings specified. Materials not displaying manufacturer’s product literature are not acceptable.

D. Products: Subject to compliance with requirements, provide product listed in other Part 2 articles for the paint category indicated.

2.2 HIGH-PERFORMANCE COATINGS, GENERAL

A. Material Compatibility:

1. Provide materials for use within each coating system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.

2. For each coat in a coating system, provide products recommended in writing by manufacturers of topcoat for use in coating system and on substrate indicated.

3. Provide products of same manufacturer for each coat in a coating system.

B. Colors: As selected by Owner and Engineer from manufacturer's full range.

2.3 SOURCE QUALITY CONTROL

A. Testing of Coating Materials: Owner reserves the right to invoke the following procedure:

1. Contractor shall employ the services of a qualified independent testing agency to sample coating materials. Contractor will be notified in advance and may be present when samples are taken. If coating materials have already been delivered to Project site, samples may be taken at Project site. Samples will be identified, sealed, and certified by testing agency.

2. Testing agency will perform tests for compliance with product requirements.

3. Owner may direct Contractor to stop applying paints if test results show materials being used do not comply with product requirements. Contractor shall remove non-complying coating materials from Project site, pay for testing, and recoat surfaces coated with rejected materials. Contractor will be required to remove rejected materials from previously coated surfaces if, on recoating with complying materials, the two coatings are incompatible.

2.4 CAULK

A. Process piping flanges shall be caulked to seal any and all voids following application of the final coat of epoxy using one of the following products:

1. MasterSeal NP 125 – Clear
2. Sikaflex Crystal Clear Multi-Purpose Sealant
3. Color shall be clear

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.

1. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:

a. Concrete: 12 percent.
b. Masonry (Clay and CMU): 12 percent.
c. Gypsum Board: 12 percent.

B. Gypsum Board Substrates: Verify that finishing compound is sanded smooth.

C. Plaster Substrates: Verify that plaster is fully cured.

D. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.

E. Proceed with coating application only after unsatisfactory conditions have been corrected.

1. Beginning coating application constitutes Contractor's acceptance of substrates and conditions.

3.2 PREPARATION

A. Comply with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual" applicable to substrates indicated.

B. Remove hardware, hardware accessories, covers, plates, machined surfaces, light fixtures, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.

1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection.

C. Clean substrates of substances that could impair bond of coatings, including dust, dirt, oil, grease, and incompatible paints and encapsulants.

1. Schedule cleaning and painting so dust and other contaminants from the cleaning process will not fall on wet, newly painted surfaces.

2. Remove incompatible primers and re-prime substrate with compatible primers or apply tie coat as required to produce coating systems indicated.

3. All non-ferrous metals, whether to be shop or field primed, shall be solvent-cleaned prior to application of pretreatment and/or primer. In the field, all welds, rusted or abraded areas shall be prepared as outlined hereinafter.

D. No painting shall be performed before the prepared surfaces are reviewed and approved by the Engineer. Incompatible primers shall be removed.

E. Concrete Substrates: Allow new concrete to cure 28 days. Verify dryness by testing for moisture with a “plastic film tape-down test” (Reference ASTM D 4263) If necessary for testing horizontal surfaces, perform “Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride (Reference ASTM F 1869) Moisture content not to exceed three pounds per 1,000 sq. ft. in a 24 period. Abrasive blast or mechanically abrade to remove laitance, form release agents, curing compounds, sealers and other contaminants and to provide profile in accordance with the manufacturers recommendations for the specified product and the intended environment. Reference SSPC SP-13 and ICRI. Voids, bugholes and other cavities should be filled with recommended filler or surfacer. All surfaces must be clean dry and free of oil, grease and other contaminants.

F. Masonry Substrates: Allow new mortar to cure for 28 days. Remove efflorescence and chalk. Do not coat surfaces if moisture content or alkalinity of surfaces or if alkalinity of mortar joints exceed that permitted in manufacturer's written instructions.

1. Clean surfaces with pressurized water. Use pressure range of 100 to 600 psi at 6 to 12 inches.

G. Steel Substrates: Remove rust, loose mill scale, and shop primer if any. Clean using methods recommended in writing by paint manufacturer but not less than the following:

1. SSPC-SP 10/NACE No. 2, "Near-White Blast Cleaning."

H. Shop-Primed Steel Substrates: Clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with the same material as used for shop priming to comply with SSPC-PA 1 for touching up shop-primed surfaces. Scarify epoxy shop primer if more than 60 days old. Verify coating compatibility, referencing the Non-Compatible Primer Section.

I. Galvanized-Metal and Black Pipe (Gas) Substrates: Remove all soluble and insoluble contaminants and corrosion. Sweep (Abrasive) Blast per ASTM D 6386 to achieve a uniform anchor profile (1.0 - 2.0 mils).

J. Ductile Iron Pipe and Cast Ductile Iron Fittings:

1. Abrasive blast clean ductile iron pipe in accordance with NAPF 500-03-04, External Pipe Surfaces.

2. Abrasive Blast clean cast ductile iron fitting in accordance with NAPF 500-03-05, Ductile Iron Fitting Blast Clean #1.

3. Blast cleaned surfaces must be kept clean through the painting and preliminary curing process.

K. Fiberglass and PVC: Hand sand to scarify.

L. Apply high-performance coatings according to manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual."

1. Use applicators and techniques suited for coating and substrate indicated.

2. Coat surfaces behind movable equipment and furniture same as similar exposed surfaces. Before final installation, coat surfaces behind permanently fixed equipment or furniture with prime coat only.

3. Coat back sides of access panels, removable or hinged covers, and similar hinged items to match exposed surfaces.

4. Do not apply coatings over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.

M. Tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of the same material are to be applied. Tint undercoats to match color of finish coat, but provide sufficient difference in shade of undercoats to distinguish each separate coat.

N. If undercoats or other conditions show through final coat, apply additional coats until cured film has a uniform coating finish, color, and appearance.

O. Apply coatings to produce surface films without cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections. Produce sharp glass lines and color breaks.

3.3 APPLICATION

A. Materials shall be mixed, thinned, and applied according to the manufacturer’s printed instruction. Allow each coat to dry thoroughly before applying the next coat.

B. All work shall be cut-in neatly and finish coats shall be uniform in color and texture without streaks, laps, heavy build-ups, runs, sags, or missed areas.

C. On all surfaces, paint shall be applied at the rate specified by the manufacturer to achieve the minimum dry mil thickness required. If material has thickened or must be diluted for application by spray gun, the coating shall be built-up to the same mil thickness achieved with undiluted material. Deficiencies in film thickness shall be corrected by the application of an additional coat or coats of paint as required. On porous surfaces it shall be the painter’s responsibility to achieve a protective and decorative finish either by increasing the coverage rate or by applying additional coats of paint.

3.4 CLEANING AND PROTECTION

A. At the end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.

B. After completing coating application, clean spattered surfaces. Remove spattered coatings by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.

C. Protect work of other trades against damage from coating operation. Correct damage by cleaning, repairing, replacing, and recoating, as approved by Engineer, and leave in an undamaged condition.

D. At completion of construction activities of other trades, touch up and restore damaged or defaced coated surfaces to the satisfaction of the Owner's Representative.

3.5 EXTERIOR HIGH-PERFORMANCE COATING SCHEDULE

A. Steel Substrates:

1. Epoxy / Polyurethane System:

a. Prime Coat:

1) Paint Type: Polyamidoamine Epoxy, Tnemec Series N140, Pota-Pox Plus, 2.5-3.5 mils dry film thickness.

b. Intermediate Coat:

1) Paint Type: Polyamidoamine Epoxy, Tnemec Series 140 Pota-Pox Plus, 4.0 mils dry film thickness.

c. Topcoat:

1) Paint Type: Aliphatic Acrylic Polyurethane, Tnemec Series 1074 Endura-Shield II, 3.0 mils dry film thickness.

2. The process piping flange to pipe connection shall be **caulked after the application of all coatings** with the specified clear caulking material.

B. Galvanized-Metal and Black Pipe (Gas) Substrates:

1. Epoxy / Polyurethane System:

a. Prime Coat:

1) Paint Type: Polyamide Epoxy, Tnemec Series N69, Hi-Build Epoxoline II, 2.0-3.0 mils dry film thickness.

b. Topcoat:

1) Paint Type: Aliphatic Acrylic Polyurethane, Tnemec Series 1074 Endura-Shield II, 2.0 - 3.0 mils dry film thickness.

C. Factory-Primed Metal Substrates; Exterior Hollow Metal Doors and Frames

1. Epoxy / Polyurethane System:

a. Field Prime Coat:

1) Paint Type: Polyamide Epoxy, Tnemec Series 27 F.C. Typoxy, 2.0-3.0 mils dry film thickness.

b. Topcoat:

1) Paint Type: Aliphatic Acrylic Polyurethane, Tnemec Series 1074 Endura-Shield II, 3.0 mils dry film thickness.

D. PVC and FRP Doors:

1. Epoxy / Polyurethane System:

a. Prime Coat:

1) Paint Type: Polyamide Epoxy, Tnemec Series N69 Hi-Build Epoxoline II, 2.0 to 3.0 mils dry film thickness.

b. Topcoat:

1) Paint Type: Aliphatic Acrylic Polyurethane, Tnemec Series 1074 Endura-Shield II, 3.0 mils dry film thickness.

E. Raceways and Supporting Devices:

1. Epoxy / Polyurethane System:

a. Prime Coat:

1) Paint Type: Polyamide Epoxy, Tnemec Series N69 Hi-Build Epoxoline II, 2.0 – 3.0 mils dry film thickness.

b. Topcoat:

1) Paint Type: Aliphatic Acrylic Polyurethane, Tnemec Series 1074 Endura-Shield II, 3.0 mils dry film thickness.

F. Ductile Iron Pipe and Cast Ductile Iron Fittings

1. Epoxy / Polyurethane System:

a. Prime Coat:

1) Paint Type: Polyamide Epoxy, Tnemec Series 20HS, Pota-Pox, 3.0- 5.0 mils dry film thickness.

b. Intermediate Coat:

1) Paint Type: Polyamide Epoxy, Tnemec Series N69 Hi-Build Epoxoline II, 4.0 to 6.0 mils dry film thickness.

c. Topcoat:

1) Paint Type: Aliphatic Acrylic Polyurethane, Tnemec Series 1074 Endura-Shield, 3.0 mils dry film thickness.

3.6 INTERIOR HIGH-PERFORMANCE COATING SCHEDULE

A. Concrete Substrates, Vertical Surfaces:

1. Epoxy System:

a. Prime Coat:

1) Paint Type: Polyamidoamine Epoxy, Tnemec Series N69 Hi-Build Epoxoline II, 10.0 mils dry film thickness. Spray apply and backroll at a spreading rate of 100 sq. ft./ gal.

b. Intermediate Coat:

1) Paint Type: Polyamide Epoxy, Tnemec Series N69 Hi-Build Epoxoline II, 4.0-5.0 mils dry film thickness.

c. Topcoat:

1) Paint Type: Polyadmide Epoxy, Tnemec Series N69 Hi-Build Epoxoline II, 4.0-5.0 mils dry film thickness.

B. Concrete Substrates, Horizontal Surfaces: all horizontal floor surfaces in Water Plant

1. Slip Resistant Epoxy / Urethane system.

a. Prime Coat:

1) Paint Type: Modified Polyamine Epoxy, Tnemec Series 201 Epoxoprime, 6.0-12.0 dry film thickness

b. Intermediate Coat:

1) Paint Type: Modified Polyamine Epoxy, Tnemec Series 280 Tneme-Glaze, 6.0-12.0 dry film thickness

c. Topcoat:

1) Paint type: Aliphatic Polyester Polyurethane, Tnemec Series 290 CRU, 2.0-3.0 dry mils.

2) Color: 290-31GR Slate Gray

3) Glass Bead Addition: Include 2 to 4 ounces by volume of Series 211-212 Glass Beads (50-80 mesh coarse bead) added per mixed gallon of Series 290.

C. CMU Substrates:

1. Epoxy System:

a. Prime Coat:

1) Paint Type: Polyamide Epoxy, Tnemec Series 66HS Hi-Build Epoxoline, 10.0 mils dry film thickness. Spray apply and backroll at a spreading rate of 100 sq. ft./ gal.

b. Intermediate Coat:

1) Paint Type: Polyamide Epoxy, Tnemec Series N69 Hi-Build Epoxoline II, 4.0-5.0 mils dry film thickness.

c. Topcoat:

1) Paint Type: Polyamide Epoxy, Tnemec Series N69 Hi-Build Epoxoline II, 4.0-5.0 mils dry film thickness.

D. Steel Substrates and Structural Members – Interior Non-Potable:

1. Epoxy / Polyurethane System:

a. Prime Coat:

1) Paint Type: Polyamide Epoxy, Tnemec Series N140 Pota-Pox Plus, 2.5-3.5 mils dry film thickness.

b. Intermediate Coat:

1) Paint Type: Polyamide Epoxy, Tnemec Series N69 Hi-Build EpoxolineII, 4.0 mils dry film thickness.

c. Topcoat:

1) Paint Type: Aliphatic Acrylic Polyurethane, Tnemec Series 1074 Endura-Shield II, 4.0 mils dry film thickness.

d. Coating thickness shall range from 10.5 to 11.5 with no reading less than 10.0 mils.

E. Steel Substrates – Interior Potable:

1. High-Build Epoxy System:

a. Prime Coat:

1) Paint Type: Polyamide Epoxy, Tnemec Series N140 Pota-Pox Plus, 2.5-3.5 mils dry film thickness.

b. Intermediate Coat:

1) Paint Type: Polyamide Epoxy, Tnemec Series N140 Pota-Pox Plus, 4.0 – 6.0 mils dry film thickness.

c. Topcoat:

1) Paint Type: Polyamide Epoxy, Tnemec Series N140 Pota-Pox Plus, 4.0 – 6.0 mils dry film thickness.

d. Coating thickness shall range from 10.5 to 15.0 mils with no reading less than 10.0 mils.

F. Galvanized-Metal and Black Pipe (Gas) Substrates:

1. Epoxy / Polyurethane System:

a. Prime Coat:

1) Paint Type: Polyamide Epoxy, Tnemec Series N69 Hi-Build Epoxoline II, 2.5-3.5 mils dry film thickness.

b. Topcoat(s):

1) Paint Type: Aliphatic Acrylic Polyurethane, Tnemec Series 1074 Endura-Shield II, 2.0 – 3.0 mils dry film thickness.

G. Factory-Primed Metal Substrates, Exterior Hollow Metal Doors and Frames

1. Epoxy / Polyurethane System:

a. Field Prime Coat:

1) Paint Type: Polyamide Epoxy, Tnemec Series 27 F.C. Typoxy, 2.0-3.0 mils dry film thickness.

b. Topcoat(s):

1) Paint Type: Aliphatic Acrylic Polyurethane, Tnemec Series 1074 Endura-Shield II, 2.0 – 3.0 mils dry film thickness.

H. Gypsum Board and Plaster Substrates:

1. Waterborne Acrylic Epoxy System

a. Prime Coat:

1) Paint Type: Waterborne Modified Polyamine Epoxy, Tnemec Series 151-1051 Elasto-Grip FC, 0.7 – 1.5 mils

b. Intermediate Coat:

1) Paint Type: Waterborne Acrylic Epoxy, Tnemec Series 113 H.B. Tneme-Tufcoat, 2.0 – 3.0 dry film thickness

c. Topcoat:

1) Paint Type: Waterborne Acrylic Epoxy, Tnemec Series 113 H.B. Tneme-Tufcoat, 2.0 – 3.0 dry film thickness.

I. PVC and FRP Doors:

1. Epoxy / Polyurethane System:

a. Prime Coat:

1) Paint Type: Polyamide Epoxy, Tnemec Series N69 Hi-Build Epoxoline II, 2.0 – 3.0 mils dry film thickness.

b. Topcoat:

1) Paint Type: Aliphatic Acrylic Polyurethane, Tnemec Series 1074 Endura-Shield II, 2.0 – 3.0 mils dry film thickness.

J. Raceways and Supporting Devices:

1. Epoxy System:

a. Prime Coat:

1) Paint Type: Polyamide Epoxy, Tnemec Series N69 Hi-Build Epoxoline II, 2.0 – 3.0 mils dry film thickness.

b. Topcoat:

1) Paint Type: Aliphatic Acrylic Polyurethane, Tnemec Series 1074 Endura-Shield II, 2.0 – 3.0 mils dry film thickness.

K. Ductile Iron Pipe, Cast Ductile Iron Fittings

1. High-Build Epoxy System:

a. Prime Coat:

1) Paint Type: Polyamide Epoxy, Tnemec Series 20, Pota-Pox, 3.0-5.0 mils dry film thickness.

b. Intermediate Coat:

1) Paint Type: Polyamide Epoxy, Tnemec Series 20 Pota-Pox, 4.0 to 6.0 mils dry film thickness.

c. Topcoat:

1) Paint Type: Aliphatic Acrylic Polyurethane, Tnemec Series 1074 Endura-Shield II, 2.0 – 3.0 mils dry film thickness.

3.7 COLOR SCHEDULE

A. Colors: As follows.

1. Water Lines

a. Raw.....…….Olive green
b. Settled or Clarified or Filtered……..Aqua
c. Finish or Potable……Dark Blue

2. Chemical Lines

a. Chlorine (gas & solution)..……Yellow
b. Fluoride.....……..Light Blue with Red Band
c. Gas……..Yellow

3. Waste Lines

a. Backwash Waste…….Light Brown
b. Sanitary Sewer……Dark Gray

4. Other

a. Compressed Air……..Dark Green
b. Other Lines .....Light Gray

B. The contents and direction of flow shall be stenciled on the piping in a contrasting color.

1. In lieu of painting flow direction, vinyl labels may be attached to the pipe and secured with plastic ties.

END OF SECTION 099600

DIVISION 22 - PLUMBING
SECTION 22 07 19 - PLUMBING PIPING INSULATION

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Piping insulation.

B. Jackets and accessories.

1.2 RELATED REQUIREMENTS

A. Section 07 84 00 - Firestopping.

B. Section 22 10 05 - Plumbing Piping: Placement of hangers and hanger inserts.

1.3 REFERENCE STANDARDS

A. ASTM C547 - Standard Specification for Mineral Fiber Pipe Insulation; 2017.

B. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2023b.

C. ASTM E96/E96M - Standard Test Methods for Gravimetric Determination of Water Vapor Transmission Rate of Materials; 2023.

D. UL 723 - Standard for Test for Surface Burning Characteristics of Building Materials; Current Edition, Including All Revisions.

1.4 SUBMITTALS

A. Product Data: Provide product description, thermal characteristics, list of materials and thickness for each service, and locations.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: Skilled mechanics who have successfully completed an apprenticeship program or another craft training program certified by the Department of Labor, Bureau of Apprenticeship and Training.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Packaging: Insulation material containers shall be marked by manufacturer with appropriate ASTM standard designation, type and grade, and maximum use temperature.

1.7 FIELD CONDITIONS

A. Maintain ambient conditions required by manufacturers of each product.

B. Maintain temperature before, during, and after installation for minimum of 24 hours.

PART 2 PRODUCTS

2.1 REGULATORY REQUIREMENTS

A. Surface Burning Characteristics: Flame spread index/Smoke developed index of 25/50, maximum, when tested in accordance with ASTM E84, UL 723, ASTM E84, or UL 723.

2.2 GLASS FIBER

A. Manufacturers:

1. Johns Manville Corporation; Micro-Lok: www.jm.com.

2. Knauf Insulation; 1000 Degree Pipe Insulation: www.knaufusa.com.

3. Owens Corning Corporation; Fiberglas Pipe Insulation
ASJ: www.ocbuildingspec.com/#sle.

B. Insulation: ASTM C547and ASTM C795; rigid molded, noncombustible.

1. 'K' value: ASTM C177,.23 at 75 degrees F.

2. Maximum Service Temperature: 850 degrees F.

3. Maximum Moisture Absorption: 0.2 percent by volume.

C. Vapor Barrier Jacket: White Kraft paper with glass fiber yarn, bonded to aluminized film; moisture vapor transmission when tested in accordance with ASTM E96/E96M of 0.02 perm-inches.

D. Vapor Barrier Lap Adhesive: Compatible with insulation.

E. Insulating Cement/Mastic: ASTM C195; hydraulic setting on mineral wool.

F. Indoor Vapor Barrier Finish:

1. Cloth: Untreated; 9 oz/sq yd weight.

2. Vinyl emulsion type acrylic, compatible with insulation, black color.

G. Insulating Cement: ASTM C449.

2.3 FLEXIBLE ELASTOMERIC CELLULAR INSULATION

A. Manufacturer:

1. Aeroflex USA, Inc: www.aeroflexusa.com.

2. Armacell LLC: www.armacell.us.

3. K-Flex USA LLC: www.kflexusa.com.

B. Insulation: Preformed flexible elastomeric cellular rubber insulation complying with ASTM C534/C534M Grade 3; use molded tubular material wherever possible.

1. Minimum Service Temperature: Minus 40 degrees F.

2. Maximum Service Temperature: 220 degrees F.

3. Connection: Waterproof vapor barrier adhesive.

C. Elastomeric Foam Adhesive: Air dried, contact adhesive, compatible with insulation.

2.4 JACKETING AND ACCESSORIES

A. PVC Plastic.

1. Jacket: One piece molded type fitting covers and sheet material, white color.

2. Covering Adhesive Mastic: Compatible with insulation, as recommended by jacket material manufacturer.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that piping has been tested and is free of defects before applying insulation materials.

B. Verify that surfaces are clean and dry, with foreign material removed.

3.2 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Install insulation with longitudinal seams at top and bottom of horizontal runs.

C. Do not weld brackets, clips, or other attachment devices to piping, fittings, and specialties.

D. Keep insulation materials dry during application and finishing.

E. Install insulation with tight longitudinal seams and end joints. Bond seams and joints with adhesive recommended by insulation material manufacturer.

F. Install insulation with least number of joints practical.

G. Insulated pipes conveying fluids below ambient temperature: Insulate entire system including fittings, valves, unions, flanges, strainers, flexible connections, and expansion joints.

H. Insulate instrument connections for thermometers, pressure gages, pressure temperature taps, test connections, flow meters, sensors, switches, and transmitters on insulated pipes. Shape insulation at these connections by tapering it to and around the connection with insulating cement and finish with finishing cement, mastic, and flashing sealant.

I. Install removable insulation covers at locations indicated. Installation shall conform to the following:

1. Make removable flange and union insulation from sectional pipe insulation of same thickness as that on adjoining pipe. Install same insulation jacket as adjoining pipe insulation.

2. When flange and union covers are made from sectional pipe insulation, extend insulation from flanges or union long at least two times the insulation thickness over adjacent pipe insulation on each side of flange or union. Secure flange cover in place with stainless-steel or aluminum bands. Select band material compatible with insulation and jacket.

3. Construct removable valve insulation covers in same manner as for flanges, except divide the two-part section on the vertical center line of valve body.

4. When covers are made from block insulation, make two halves, each consisting of mitered blocks wired to stainless-steel fabric. Secure this wire frame, with its attached insulation, to flanges with tie wire. Extend insulation at least 2 inches (50 mm) over adjacent pipe insulation on each side of valve. Fill space between flange or union cover and pipe insulation with insulating cement. Finish cover assembly with insulating cement applied in two coats. After first coat is dry, apply and trowel second coat to a smooth finish.

J. Where vapor barrier is indicated, seal joints, seams, and penetrations in insulation at hangers, supports, anchors, and other projections with vapor-barrier mastic.

1. Install insulation continuously through hangers and around anchor attachments.

2. For insulation application where vapor barriers are indicated, extend insulation on anchor legs from point of attachment to supported item to point of attachment to structure. Taper and seal ends at attachment to structure with vapor-barrier mastic.

3. Install insert materials and install insulation to tightly join the insert. Seal insulation to insulation inserts with adhesive or sealing compound recommended by insulation material manufacturer.

4. Cover inserts with jacket material matching adjacent pipe insulation. Install shields over jacket, arranged to protect jacket from tear or puncture by hanger, support, and shield.

K. For hot piping conveying fluids 140 degrees F or less, do not insulate flanges and unions at equipment, but bevel and seal ends of insulation.

L. Glass fiber insulated pipes conveying fluids above ambient temperature:

1. Provide standard jackets, with or without vapor barrier, factory-applied or field-applied. Secure with self-sealing longitudinal laps and butt strips with pressure sensitive adhesive. Secure with outward clinch expanding staples.

2. Insulate fittings, joints, and valves with insulation of like material and thickness as adjoining pipe. Finish with glass cloth and adhesive or PVC fitting covers.

M. Cut insulation in a manner to avoid compressing insulation more than 75 percent of its nominal thickness.

N. Finish installation with systems at operating conditions. Repair joint separations and cracking due to thermal movement.

O. Repair damaged insulation facings by applying same facing material over damaged areas. Extend patches at least 4 inches (100 mm) beyond damaged areas. Adhere, staple, and seal patches similar to butt joints.

P. For above-ambient services, do not install insulation to the following:

1. Vibration-control devices.

2. Testing agency labels and stamps.

3. Nameplates and data plates.

4. Cleanouts.

Q. Inserts and Shields:

1. Application: Piping 1-1/2 inches diameter or larger.

2. Shields: Galvanized steel between pipe hangers or pipe hanger rolls and inserts.

3. Insert Location: Between support shield and piping and under the finish jacket.

4. Insert Configuration: Minimum 6 inches long, of same thickness and contour as adjoining insulation; may be factory fabricated.

5. Insert Material: Hydrous calcium silicate insulation or other heavy density insulating material suitable for the planned temperature range.

R. Continue insulation through walls, sleeves, pipe hangers, and other pipe penetrations. Finish at supports, protrusions, and interruptions. At fire separations, refer to Section 07 84 00.

S. Pipe exposed in all spaces (less than 10 feet above finished floor: Finish with PVC jacket and fitting covers.

3.3 SCHEDULES

A. Plumbing Systems:

1. Domestic Hot and cold Water Supply:

a. Glass Fiber Insulation:

1) Thickness: 1 inch

b. Flexible Elastomeric Insulation:

1) Thickness: 1 inch.

END OF SECTION 22 07 19

DIVISION 23 - HEATING, VENTILATING, AND AIR-CONDITIONING (HVAC)
SECTION 23 34 23 - HVAC POWER VENTILATORS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Roof ventilators.

B. Wall exhausters.

C. Cabinet exhaust fans.

D. Ceiling exhaust fans.

E. Inline centrifugal fans and blowers.

1.2 REFERENCE STANDARDS

A. AMCA (DIR) - (Directory of) Products Licensed Under AMCA International Certified Ratings Program; 2015.

B. AMCA 99 - Standards Handbook; 2016.

C. AMCA 204 - Balance Quality and Vibration Levels for Fans; 2005.

D. AMCA 210 - Laboratory Methods of Testing Fans for Certified Aerodynamic Performance Rating; 2016.

E. AMCA 300 - Reverberant Room Method for Sound Testing of Fans; 2014.

F. AMCA 301 - Methods for Calculating Fan Sound Ratings from Laboratory Test Data; 2014.

1.3 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements for submittal procedures.

B. Product Data: Provide data on fans and accessories, including fan curves with specified operating point plotted, power, rpm, sound power levels at rated capacity, and electrical characteristics and connection requirements.

C. Maintenance Data: Include instructions for lubrication, motor and drive replacement, spare parts list, and wiring diagrams.

D. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.

1. See Section 01 60 00 - Product Requirements, for additional provisions.

2. Extra Fan Belts: One set for each individual fan.

PART 2 PRODUCTS

2.1 POWER VENTILATORS - GENERAL

A. Manufacturers:

1. Carnes, a division of Carnes Company Inc; _____: www.carnes.com/#sle.

2. Greenheck Fan Corporation; _____: www.greenheck.com/#sle.

3. Loren Cook: www.lorencook.com

B. Static and Dynamically Balanced: Comply with AMCA 204.

C. Performance Ratings: Comply with AMCA 210, bearing certified rating seal.

D. Sound Ratings: Comply with AMCA 301, tested to AMCA 300, bearing certified sound ratings seal.

E. Fabrication: Comply with AMCA 99.

F. Electrical Components: Listed and classified by Underwriters Laboratories Inc. as suitable for the purpose specified and indicated.

2.2 WALL EXHAUSTERS

A. Manufacturers:

1. Carnes, a division of Carnes Company Inc; _____: www.carnes.com/#sle.

2. Greenheck Fan Corporation; _____: www.greenheck.com/#sle.

3. Patterson Fan Company, Inc; _____: www.pattersonfan.com/#sle.

4. Loren Cook: www.lorencook.com

5.

B. Fan Unit: V-belt or direct driven with spun aluminum housing; resiliently mounted motor; 1/2 inch mesh, 0.062 inch thick aluminum wire bird screen.

ADDENDUM 03
01.29.2026

C. Backdraft Damper: Gravity actuated, aluminum multiple blade construction, felt edged with offset hinge pin, nylon bearings, blades linked, and line voltage motor drive, power open, spring return.

D. Sheaves: For V-belt drives, provide cast iron or steel, dynamically balanced, bored to fit shafts and keyed; variable and adjustable pitch motor sheaves selected so required rpm can be reached with sheaves set at mid-position; fan shaft with self-aligning prelubricated ball bearings.

E. Performance Ratings: As indicated on drawings.

2.3 CABINET EXHAUST FANS

ADDENDUM 03
01.29.2026

A. Manufacturers:

1. Carnes, a division of Carnes Company Inc; _____: www.carnes.com/#sle.
2. ~~Greenheck Fan Corporation; _____: www.greenheck.com/#sle.~~
3. Loren Cook: www.lorencook.com
4. Twin City Fan & Blower; T: www.tcf.com/#sle.

B. Centrifugal Fan Unit: V-belt or direct driven with galvanized steel housing lined with acoustic insulation, resiliently mounted motor, gravity backdraft damper in discharge.

C. Grille: Molded white plastic.

D. Sheaves: Cast iron or steel, dynamically balanced, bored to fit shafts and keyed; variable and adjustable pitch motor sheaves selected so required rpm is reached with sheaves set at mid-position; fan shaft with self-aligning pre-lubricated ball bearings.

E. Performance Ratings: As indicated on drawings.

2.4 UPBLAST ROOF EXHAUSTERS

ADDENDUM 03
01.29.2026

A. Manufacturers:

1. Carnes, a division of Carnes Company Inc; VUBK: www.carnes.com/#sle.
2. Greenheck Fan Corporation; _____: www.greenheck.com/#sle.
3. Patterson Fan Company, Inc; _____: www.pattersonfan.com/#sle.
4. Loren Cook: www.lorencook.com

B. Belt Drive Fan:

1. Fan Wheel:

a. Type: Non-overloading, backward inclined centrifugal.

b. Material: Aluminum, statically and dynamically balanced.

2. Housing:

a. Construct of heavy gauge aluminum including curb cap, windband, and motor compartment.

b. Rigid internal support structure.

c. One-piece fabricated or fully welded curb-cap base to windband for leak proof construction.

d. Construct drive frame assembly of heavy gauge steel, mounted on vibration isolators.

e. Provide breather tube for fresh air motor cooling and wiring.

C. Shafts and Bearings:

1. Fan Shaft:

a. Ground and polished steel with anti-corrosive coating.

b. First critical speed at least 25 percent over maximum cataloged operating speed.

2. Bearings:

a. Permanently sealed or pillow block type.

b. Minimum L10 life in excess of 100,000 hours (equivalent to L50 average life of 500,000 hours), at maximum cataloged operating speed.

c. 100 percent factory tested.

D. Drive Assembly:

1. Belts, pulleys, and keys oversized for a minimum of 150 percent of driven horsepower.

2. Belts: Static free and oil resistant.

3. Fully machined cast iron type, keyed and securely attached to the wheel and motor shafts.

4. Motor pulley adjustable for final system balancing.

5. Readily accessible for maintenance.

E. Drain Trough: Allows for single-point drainage of water, grease, and other residues.

END OF SECTION 23 34 23

DIVISION 23 - HEATING, VENTILATING, AND AIR-CONDITIONING (HVAC)
SECTION 23 34 39 - HIGH-VOLUME, LOW-SPEED PROPELLER FANS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. High-volume, low-speed propeller fans.

1.2 RELATED REQUIREMENTS

A. Section 23 05 13 - Common Motor Requirements for HVAC Equipment.

B. Section 23 05 48 - Vibration Controls for HVAC Piping and Equipment.

1.3 REFERENCE STANDARDS

A. AMCA 99 - Standards Handbook; 2016.

B. AMCA 204 - Balance Quality and Vibration Levels for Fans; 2005.

C. UL 507 - Electric Fans; Current Edition, Including All Revisions.

1.4 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements for submittal procedures.

B. Product Data: Provide data on fans and accessories including fan curves with specified operating point clearly plotted, power, RPM, sound power levels at rated capacity, and electrical characteristics and connection requirements.

1.5 WARRANTY

A. See Section 01 78 00 - Closeout Submittals, for additional warranty requirements.

B. Correct defective Work within a five year period after Date of Substantial Completion.

PART 2 PRODUCTS

2.1 GENERAL REQUIREMENTS

A. UL Compliance: UL listed and labeled, designed, manufactured, and tested in accordance with UL 507.

B. Static and Dynamically Balanced: Comply with AMCA 204.

C. Fabrication: Comply with AMCA 99.

D. Electrical Components: Listed and classified by Underwriters Laboratories Inc. as suitable for the purpose specified and indicated.

2.2 HIGH-VOLUME, LOW-SPEED PROPELLER FANS

A. Manufacturers:

ADDENDUM 03
01.29.2026

1. Big Ass Fans; Basic 6: www.bigassfans.com/#sle.
2. Greenheck; www.greenheck.com
3. ~~Hunter Fan International; Titan: www.hunterfan.com/#sle.~~
4. Epic Fans: www.epicfan.com

B. ~~Performance Ratings:~~

1. See schedules.

C. Shafts and Bearings:

1. Fan Shaft:
   a. Ground and polished steel with anti-corrosive coating.
   b. First critical speed at least 25 percent over maximum cataloged operating speed.
2. Bearings:
   a. Permanently sealed or pillow block type.
   b. Minimum L10 life in excess of 100,000 hours (equivalent to L50 average life of 500,000 hours), at maximum cataloged operating speed.
   c. 100 percent factory tested.

ADDENDUM 03
01.29.2026

D. Fan Controllers:

1. Manufacturers:
   a. ~~Greenheck; _____; www.greenheck.com.~~
   b. Epic Fans: www.epicfan.com
2. Factory mounted and wired.

3. Digital Fan Controllers:

a. Individually control or synchronize fan direction and speed.

PART 3 EXECUTION

3.1 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Secure fan with stainless steel lag screws to structure.

C. Ceiling-Mounted Fans:

1. Install fans with resilient mountings and flexible electrical leads. See Section 23 05 48.

D. Provide sheaves required for final air balance for belt-driven motors.

END OF SECTION 23 34 39

DIVISION 26 - ELECTRICAL
SECTION 26 36 00 - TRANSFER SWITCHES

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Transfer switches for low-voltage (600 V and less) applications and associated accessories:

1. Automatic transfer switches.

2. Includes service entrance rated transfer switches.

3. Includes bypass/isolation transfer switches.

4. Remote annunciators.

1.2 RELATED REQUIREMENTS

A. Section 03 30 00 - Cast-in-Place Concrete: Concrete equipment pads.

B. Section 26 05 26 - Grounding and Bonding for Electrical Systems.

C. Section 26 05 29 - Hangers and Supports for Electrical Systems.

D. Section 26 05 53 - Identification for Electrical Systems: Identification products and requirements.

E. Section 26 05 73 - Power System Studies: Additional criteria for the selection of equipment specified in this section.

F. Section 26 32 13 - Engine Generators: For interface with transfer switches.

1. Includes code requirements applicable to work of this section.

2. Includes additional testing requirements.

3. Includes related demonstration and training requirements.

1.3 REFERENCE STANDARDS

A. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2015.

B. NEMA EN 10250 - Enclosures for Electrical Equipment (1000 Volts Maximum); 2024.

C. NEMA IA 10042-1 - Industrial Control and Systems Part 1: Electromechanical AC Transfer Switch Equipment; 2025.

D. NETA ATS - Standard For Acceptance Testing Specifications For Electrical Power Equipment And Systems; 2021.

E. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

F. NFPA 99 - Health Care Facilities Code; 2021, with Amendment.

G. NFPA 110 - Standard for Emergency and Standby Power Systems; 2013.

H. UL 869A - Reference Standard for Service Equipment; Current Edition, Including All Revisions.

I. UL 1008 - Transfer Switch Equipment; Current Edition, Including All Revisions.

1.4 ADMINISTRATIVE REQUIREMENTS

A. Coordination:

1. Coordinate compatibility of transfer switches to be installed with work provided under other sections or by others.

a. Engine Generators: See Section 26 32 13.

2. 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 required by NFPA 70.

3. Coordinate arrangement of equipment with the dimensions and clearance requirements of the actual equipment to be installed.

4. Coordinate the work with placement of supports, anchors, etc. required for mounting.

5. Notify Architect of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

B. Preinstallation Meeting: Convene one week before starting work of this section; require attendance of all affected installers.

1.5 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide manufacturer's standard catalog pages and data sheets for each product, including ratings, configurations, dimensions, finishes, weights, service condition requirements, and installed features.

1. Where applicable, include characteristic trip curves for overcurrent protective devices upon request.

C. Shop Drawings: Include dimensioned plan views and sections indicating locations of system components, required clearances, and field connection locations. Include system interconnection schematic diagrams showing all factory and field connections.

1. Clearly indicate whether proposed short circuit current ratings are based on testing with specific overcurrent protective devices or time durations; indicate short-time ratings where applicable.

D. Specimen Warranty: Submit sample of manufacturer's warranty.

E. Evidence of qualifications for installer.

F. Evidence of qualifications for maintenance contractor (if different entity from installer).

G. Manufacturer's Installation Instructions: Indicate application conditions and limitations of use stipulated by product testing agency. Include instructions for storage, handling, protection, examination, preparation, installation, and operation of product.

H. Manufacturer's certification that products meet or exceed specified requirements.

I. Source quality control test reports.

J. Manufacturer’s detailed field testing procedures.

K. Field quality control test reports.

L. Operation and Maintenance Data: Include detailed information on system operation, equipment programming and setup, replacement parts, and recommended maintenance procedures and intervals.

1. Include contact information for entity that will be providing contract maintenance and trouble call-back service.

M. Executed Warranty: Submit documentation of final executed warranty completed in Owner's name and registered with manufacturer.

N. Maintenance contracts.

O. Project Record Documents: Record actual locations of system components, installed circuiting arrangements and routing, and final equipment settings.

P. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.

1. See Section 01 60 00 - Product Requirements, for additional provisions.

2. Bypass/Isolation Transfer Switches: Provide accessories (ramps, dollies, etc.) necessary for removal of drawout components.

1.6 QUALITY ASSURANCE

A. Comply with the following:

1. NFPA 70 (National Electrical Code).

2. NFPA 110 (Standard for Emergency and Standby Power Systems); meet requirements for Level 2 system.

B. Maintain at the project site a copy of each referenced document that prescribes execution requirements.

C. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.

1. Authorized service facilities located within 200 miles of project site.

D. Installer Qualifications: Company specializing in performing the work of this section with minimum three years documented experience with power transfer systems of similar size, type, and complexity; manufacturer's authorized installer.

E. Maintenance Contractor Qualifications: Same entity as installer or different entity with specified qualifications.

1. Contract maintenance office located within 200 miles of project site.

F. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Receive, inspect, handle, and store transfer switches in accordance with manufacturer's instructions.

B. Store in a clean, dry space. Maintain factory wrapping or provide an additional heavy canvas or heavy plastic cover to protect units from dirt, water, construction debris, and traffic.

C. Handle carefully in accordance with manufacturer's instructions to avoid damage to transfer switch components, enclosure, and finish.

1.8 FIELD CONDITIONS

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

1.9 WARRANTY

A. See Section 01 78 00 - Closeout Submittals, for additional warranty requirements.

B. Provide minimum five year manufacturer warranty covering repair or replacement due to defective materials or workmanship.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Transfer Switches:

1. Same as manufacturer of engine generator(s) used for this project.

B. Substitutions: See Section 01 60 00 - Product Requirements.

C. Source Limitations: Furnish transfer switches and accessories produced by a single manufacturer and obtained from a single supplier.

2.2 TRANSFER SWITCHES

A. Provide complete power transfer system consisting of all required equipment, conduit, boxes, wiring, supports, accessories, system programming, etc. as necessary for a complete operating system that provides the functional intent indicated.

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

C. Applications:

1. Utilize open transition transfer unless otherwise indicated or required.

2. Neutral Switching (Single Phase, Three Wire and Three Phase, Four Wire Systems):

a. Unless otherwise indicated or required, provide solid (unswitched) neutral.

3. Provide signal before transfer contacts.

D. Construction Type: Only "contactor type" (open contact) transfer switches are acceptable. Do not use "breaker type" (enclosed contact) transfer switches.

E. Automatic Transfer Switch:

1. Transfer Switch Type: Service entrance rated bypass/isolation automatic transfer switch.

2. Transition Configuration: Open-transition (no neutral position), utilizing in-phase monitor.

3. Voltage: As indicated on the drawings.

4. Ampere Rating: As indicated on the drawings.

5. Neutral Configuration: solid neutral.

6. Load Served: As indicated on the drawings.

7. Primary Source: As indicated on the drawings.

8. Alternate Source: Engine generator (fed from Generator).

9. Provide camlock receptacles inside of ATS for connection of loadbanks and portable generators.

F. Comply with NEMA IA 10042-1, and list and label as complying with UL 1008 for the classification of the intended application (e.g. emergency, optional standby).

G. Do not use double throw safety switches or other equipment not specifically designed for power transfer applications and listed as transfer switch equipment.

H. Load Classification: Classified for total system load (any combination of motor, electric discharge lamp, resistive, and tungsten lamp loads with tungsten lamp loads not exceeding 30 percent of the continuous current rating) unless otherwise indicated or required.

I. Switching Methods:

1. Open Transition:

a. Provide break-before-make transfer without a neutral position that is not connected to either source, and with interlocks to prevent simultaneous connection of the load to both sources.

b. Where in-phase transfer is indicated, utilize in-phase monitor to initiate transfer when phase angle difference between sources is near zero to limit in-rush currents.

2. Obtain control power for transfer operation from line side of source to which the load is to be transferred.

J. Service Conditions: Provide transfer switches suitable for continuous operation at indicated ratings under the service conditions at the installed location.

K. Enclosures:

1. Environment Type per NEMA EN 10250: Unless otherwise indicated, as specified for the following installation locations:

a. Indoor Clean, Dry Locations: Type 12.

2. Finish: Manufacturer's standard unless otherwise indicated.

L. Short Circuit Current Rating:

1. Withstand and Closing Rating: Provide transfer switches, when protected by the supply side overcurrent protective devices to be installed, with listed withstand and closing rating not less than the available fault current at the installed location as determined by short circuit study performed in accordance with Section 26 05 73.

2. Short Time Rating: Where the requirement for selectivity is indicated, provide transfer switches with short time ratings suitable for the maximum short time delay setting of the supply side overcurrent protective device.

M. Automatic Transfer Switches:

1. Description: Transfer switches with automatically initiated transfer between sources; electrically operated and mechanically held.

2. Control Functions:

a. Automatic mode.

b. Test Mode: Simulates failure of primary/normal source.

c. Voltage and Frequency Sensing:

1) Undervoltage sensing for each phase of primary/normal source; adjustable dropout/pickup settings.

2) Undervoltage sensing for alternate/emergency source; adjustable dropout/pickup settings.

3) Underfrequency sensing for alternate/emergency source; adjustable dropout/pickup settings.

d. Outputs:

1) Contacts for engine start/shutdown (except where direct generator communication interface is provided).

2) Auxiliary contacts; one set(s) for each switch position.

3) Signal before transfer (load disconnect) contacts; for selective load disconnection prior to transfer.

e. Adjustable Time Delays:

1) Engine generator start time delay; delays engine start signal to override momentary primary/normal source failures.

2) Transfer to alternate/emergency source time delay.

3) Retransfer to primary/normal source time delay.

4) Signal before transfer (load disconnect) contact time delay.

5) Engine generator cooldown time delay; delays engine shutdown following retransfer to primary/normal source to permit generator to run unloaded for cooldown period.

f. In-Phase Monitor (Open Transition Transfer Switches): Monitors phase angle difference between sources for initiating in-phase transfer.

g. Engine Exerciser: Provides programmable scheduled exercising of engine generator selectable with or without transfer to load; provides memory retention during power outage.

h. Retransfer to Normal Switch: Bypasses time delays for retransfer to primary/normal source.

3. Status Indications:

    a. Connected to alternate/emergency source.

    b. Connected to primary/normal source.

    c. Alternate/emergency source available.

    d. Primary/normal source available.

4. Other Features:

    a. Event log.

5. Automatic Sequence of Operations:

    a. Upon failure of primary/normal source for a programmable time period (engine generator start time delay), initiate starting of engine generator where applicable.

    b. Where applicable, initiate signal before transfer (load disconnect) contacts at programmable time before transfer.

    c. When alternate/emergency source is available, transfer load to alternate/emergency source after programmable time delay.

    d. When primary/normal source has been restored, retransfer to primary/normal source after a programmable time delay. Bypass time delay if alternate/emergency source fails and primary/normal source is available.

    e. Where applicable, initiate shutdown of engine generator after programmable engine cooldown time delay.

N. Service Entrance Rated Transfer Switches:

1. Furnished with integral disconnecting and overcurrent protective device on the primary/normal source and with ground-fault protection where indicated.

2. Listed and labeled as suitable for use as service equipment according to UL 869A.

O. Bypass/Isolation Transfer Switches:

1. Description: Factory-assembled units consisting of interconnected transfer switch and bypass/isolation switch that permits manual bypass and isolation of the transfer switch with connection of the load to either source.

2. Bypass/Isolation Switch Type: Provide overlapping (make-before-break) switches with no interruption of power to load. Load break (break-before-make) switches that interrupt power to load are not acceptable.

3. Bypass/Isolation Operation:

a. Operable from exterior of enclosure.

b. Normal Mode: Provides for normal operation of transfer switch.

c. Test Mode: Provides for operational testing of bypassed transfer switch without affecting power to load.

d. Isolate Mode: Provides for complete isolation of transfer switch from all power sources, permitting removal from unit.

P. Remote Annunciators:

1. Transfer Switch Status Indications:

a. Connected to alternate/emergency source.

b. Connected to primary/normal source.

c. Alternate/emergency source available.

d. Primary/normal source available.

Q. Interface with Other Work:

1. Interface with engine generators as specified in Section 26 32 13.

2.3 SOURCE QUALITY CONTROL

A. See Section 01 40 00 - Quality Requirements, for additional requirements.

B. Perform production tests on transfer switches at factory to verify operation and performance characteristics prior to shipment. Include certified test report with submittals.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that field measurements are as indicated.

B. Verify that the ratings and configurations of transfer switches are consistent with the indicated requirements.

C. Verify that rough-ins for field connections are in the proper locations.

D. Verify that mounting surfaces are ready to receive transfer switches.

E. Verify that conditions are satisfactory for installation prior to starting work.

3.2 INSTALLATION

A. Perform work in accordance with NECA 1 (general workmanship).

B. Install products in accordance with manufacturer's instructions.

C. Arrange equipment to provide minimum clearances and required maintenance access.

D. Provide required support and attachment in accordance with Section 26 05 29.

E. Install transfer switches plumb and level.

F. Unless otherwise indicated, mount floor-mounted transfer switches on properly sized 4 inch high concrete pad constructed in accordance with Section 03 30 00.

G. Provide grounding and bonding in accordance with Section 26 05 26.

H. Identify transfer switches and associated system wiring in accordance with Section 26 05 53.

3.3 FIELD QUALITY CONTROL

A. See Section 01 40 00 - Quality Requirements, for additional requirements.

B. 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.

C. Prepare and start system in accordance with manufacturer's instructions.

D. Automatic Transfer Switches:

1. Inspect and test in accordance with NETA ATS, except Section 4.

2. Perform inspections and tests listed in NETA ATS, Section 7.22.3. The insulation-resistance tests listed as optional are not required.

E. Provide additional inspection and testing as required for completion of associated engine generator testing as specified in Section 26 32 13.

F. Correct defective work, adjust for proper operation, and retest until entire system complies with Contract Documents.

G. Submit detailed reports indicating inspection and testing results and corrective actions taken.

3.4 CLEANING

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

3.5 CLOSEOUT ACTIVITIES

A. See Section 01 78 00 - Closeout Submittals, for closeout submittals.

B. See Section 01 79 00 - Demonstration and Training, for additional requirements.

C. Demonstration: Demonstrate proper operation of transfer switches to Owner, and correct deficiencies or make adjustments as directed.

D. Training: Train Owner's personnel on operation, adjustment, and maintenance of transfer switches.

1. Use operation and maintenance manual as training reference, supplemented with additional training materials as required.

2. Provide minimum of four hours of training.

3. Instructor: Manufacturer's authorized representative.

4. Location: At project site.

E. Coordinate with related generator demonstration and training as specified in Section 26 32 13.

3.6 PROTECTION

A. Protect installed transfer switches from subsequent construction operations.

3.7 MAINTENANCE

A. See Section 01 70 00 - Execution and Closeout Requirements, for additional requirements relating to maintenance service.

B. Provide to Owner a proposal as an alternate to the base bid, a separate maintenance contract for the service and maintenance of transfer switches for 5 years from date of Substantial Completion; Include a complete description of preventive maintenance, systematic examination, adjustment, inspection, and testing, with a detailed schedule.

C. Conduct site visit at least once every three months to perform inspection, testing, and preventive maintenance. Submit report to Owner indicating maintenance performed along with evaluations and recommendations.

D. Provide trouble call-back service upon notification by Owner:

1. Provide on-site response within 4 hours of notification.

2. Include allowance for call-back service during normal working hours at no extra cost to Owner.

3. 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.

E. Maintain an on-site log listing the date and time of each inspection and call-back visit, the condition of the system, nature of the trouble, correction performed, and parts replaced.

END OF SECTION 26 36 00

DIVISION 46 - WATER AND WASTEWATER EQUIPMENT
SECTION 46 12 00 – WATER MAIN PIPING, VALVES, FITTINGS AND ACCESSORIES

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions, Special Provisions, and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes process piping, fittings, valves, supports and accessories necessary for installation of piping and connection to equipment and structures as shown on the Plans.

1. Section 01 10 10 – Summary of Work Sequence
2. Section 01 14 00 – General Coordination
3. Section 01 33 00 – Submittals
4. Section 09 96 00 – High Performance Coatings
5. Section 46 10 00 – General Requirements
6. Section 46 11 00 – Process Piping, Valves Fitting and Accessories
7. Section 46 11 05 – Electric Actuators
8. Division 46 – Process Equipment
9. Division 26 - Electrical

1.3 SYSTEM PERFORMANCE REQUIREMENTS

B. Minimum Working Pressure Ratings: Except where otherwise indicated, the following are minimum pressure requirements for water system piping.

1. Underground Piping, 200 psi (1380 kPa).

1.4 QUALITY ASSURANCE

C. Comply with requirements of the authority supplying water, including tapping of water mains and backflow prevention.

D. Codes and Standards: Comply with the requirements of the latest edition of the following:

2. Standard Specifications for Water and Sewer Main Construction in Illinois, Eighth Edition, hereinafter referred to as the Standard Specifications, shall apply as modified below and by the Special Provisions Modifying these Standard Specifications.

a. Pertinent standard drawings contained in the Specifications shall also apply except as modified in the Special Provisions or on the Plan Sheets.

1.5 SUBMITTALS

A. Manufacturers' literature and shop drawings demonstrating compliance with this Specification.

B. Submittals required by this section shall be made in one (1) group for review by the Engineer.

C. Contractor shall provide a piping layout, shop drawing and schedule of materials for all proposed piping, fitting, valves and supports 8-in. diameter and larger between process units and between process units and equipment. All piping installation shall be provided with flexibility to allow removal and re-installation of select piping and fittings.

D. Provide a tabulated schedule identifying valve or pipe size, type, location, Plan Sheet and accessories. A submittal with a general list of materials that does not identify specific locations of the equipment will be rejected.

E. Operation and Maintenance Manual: The Manufacturer shall submit two (2) complete copies of an Operation and Maintenance Manual and an electronic copy per Section 01 33 00 – Submittals. The manuals shall be in a 3-ring binder and be sectioned by component with appropriate indexing. Addresses, phone numbers and points of contact for repair and replacement equipment parts and service shall be included.

PART 2 PRODUCTS

2.1 WATER MAIN (Site Piping)

A. PVC SDR 21 – All Water Main Pipe Less than 18-inches Diameter.
1. Conforming to the latest Edition of ASTM D2241, ASTM F477, and NSF/ANSI 61.

B. Ductile Iron (D.I.) Pipe – All Water Main pipe Greater than 18-inches diameter
1. Latest edition AWWA C-151/C21.51. Cement lining, ANSI/AWWA C-104/A21.4;

a. Class 52 or as noted. Joints Mechanical ANSI/AWWA C-111/A21.11 (Below Ground). All fittings shall be restrained by a mechanical device. Fittings, Latest edition ANSI/AWWA C-110

C. PVC C-900: For all Watermain Casing Pipe
1. ANSI/AWWA C-900 Pipe Must meet the specifications laid out on the latest edition ASTM D1784, ASTM F477, and ASTM D3139.

2.2 VALVES AND ACCESSORIES

A. Tapping Valve and Sleeve

1. Tapping sleeve shall be manufactured in the U.S.A. and the sleeve shall be three hundred four (304) stainless steel body with a ductile iron flange that has a rubber seal. The sleeve shall have a full gridded SBR rubber gasket that wraps completely around the pipe for the full length of the sleeve. All nuts and bolts shall be three hundred four (304) stainless steel. The sleeve shall have a built-in tolerance for variances in type and class for each pipe material

as shown on the material proposal. All tapping sleeves shall be furnished with a three hundred four (304) stainless steel 3/4" NPT test plug for pressure testing and have a locator groove on the mating surface between tapping valve and sleeve to allow for positive alignment. Tapping Sleeve shall be ROMAC, POWERSEAL or MUELLER

B. Gate Valves

1. Non-rising stem gate valves 12” (600 mm) and smaller –Mueller A-2360; AWWA C-515 resilient wedge with restrained, mechanical joints compatible with pipe furnished.
2. Non-rising stem gate valves 14-24” (600 mm)–Mueller A-2360; AWWA C-515 resilient wedge with restrained, mechanical joints compatible with pipe furnished. With bevel gear operator for direct bury of valve on its side.
3. Valve boxes: Screw adjustable and cast iron with "WATER" on the cover.

C. FIRE HYDRANT

1. Dry-barrel fire hydrants: AWWA C-502
2. 3-Way Fire Hydrant (6”) (150 mm) inlet as shown on the Plans.
4. Joints to be restrained from the hydrant through the main.
4.. Mueller Super Centurion 250, A-423, 5 ¼” three way. The City will only accept an equal if pre-approved.

D. MECHANICAL JOINT RESTRAINT DEVICES

1.. Mechanical Joint Fitting Restraint Devices for both Ductile Iron Pipe and PVC shall have the restraint of mechanical joints incorporated into the follower gland and shall include a mechanism to impart multiple wedging action that increases with increasing pipe pressure. Follower glands shall be manufactured of ductile iron in accordance with ASTM A536.

2. Dimensions of the follower gland shall conform to and shall be compatible with mechanical joints in accordance with ANSI/AWWA C111/A21.11 or ANSI/AWWA C153/A21.53.

3. The device shall be rated for a minimum of 250 psi working pressure and a minimum safety factor of 2:1. The device shall incorporate torque nuts that twist off to assure proper torque is applied when installing.

5. Manufacturers shall be Romac, EBAA Iron, Uni-Flange or Tyler Union.

E. FLEXIBLE EXPANSION JOINT

1. Flexible expansion joints shall be installed in the locations indicated on the drawings and shall be manufactured of ductile iron conforming to the material requirements of ASTM A536 and ANSI/AWWA C153/A21.53. Foundry certification of material shall be readily available upon request.

2. Each flexible expansion joint shall be pressure tested prior to shipment against its own restraint to a minimum of 350 PSI for 3 inch through 16 inch and 250 PSI for 18 inch and greater. A minimum 2:1 safety factor, determined from the published pressure rating, shall apply.

3. Each flexible expansion joint shall consist of an expansion joint designed and cast as an integral part of a ball and socket type flexible joint, having a minimum per ball deflection of: 20º for sizes 4-inch through 12-inch; 15º for sizes 14-inch through 36-inch and 12 º for size 48-inch. The flexible expansion fitting shall not expand or exert an axial imparting thrust under internal water pressure. The flexible expansion fitting shall not increase or decrease the internal water volume as the unit expands or contracts. The minimum total linear travel shall be 8-inches.

4. All internal surfaces (wetted parts) shall be lined with a minimum of 15 mils of fusion bonded epoxy conforming to the applicable requirements of ANSI/AWWA C213. Sealing gaskets shall be constructed of EPDM. The coating shall meet ANSI/NSF-61.

5. Exterior surfaces shall be coated with a minimum of 6 mils of fusion bonded epoxy conforming to the applicable requirements of ANSI/AWWA C116/A21.16.

6. Polyethylene sleeves, meeting ANSI/AWWA C105/A21.5, shall be included for direct buried applications.

7. Manufacturer’s certification of compliance to the above standards and requirements shall be readily available upon request. The purchaser (or owner) shall reserve the right to inspect the manufacturer’s facility for compliance. All flexible expansion joints shall be The Force Balanced FLEX-TEND as manufactured by EBAA Iron, Inc. Eastland, TX., U.S.A.

PART 3 EXECUTION

1.3 INSTALLATION

A. Pipe shall be installed in accordance with the plans and above referenced specifications except as modified below.

B. Installation shall be in accordance with manufacturer's instructions.

C. All pipe shall be tested per Section 41.2.14 and 42.2.15 of the Standard Specifications for Water and Sewer Construction in Illinois, 8th Edition. Minimum test pressure of 1.5 x static pressure or 100 psi (620 kPa), whichever is greater. Pressure test shall be held for one hour and no leakage is allowed.

B. All Traffic Control measures, layout and equipment shall be in accordance with the Illinois Department of Transportation standards for Traffic Control. Traffic Control will not be paid for separately but included in the unit price of the water main.

C. All excavated material shall be loaded into trucks or other means of removing the excavated material.

1.4 EXISTING UTILITIES

A. Joint Utility Location Information for Excavators: Call the toll-free J.U.L.I.E. telephone number, 1-800-892-0123, before starting excavation. Allow 48 hours for other than emergency assistance. It shall be the Contractor's responsibility to locate or have located all utilities.

1.5 RIGHT-OF-WAY

A. Working Right-of-Way: The Contractor shall confine his operations to the limits of the working right-of-way and easements as shown on the plans. He will be held responsible for any damage to adjacent property not within the limits of the right-of-way.

1.6 PIPING INSTALLATION

A. Disconnecting Existing Water Mains: Where shown on the plans, the existing water mains shall be disconnected. The separation shall be made in one of two ways. It may consist of removing the water main from an existing valve or fitting and plugging the opening, or the Contractor may remove a section of the main, including the fitting, install two sleeves, and a short length of pipe.

B. Connect Existing Service to New Main: Where existing water mains are to be abandoned, the existing services shall be disconnected from the existing water main and reconnected to the proposed water main after the proposed water main is constructed, tested, sterilized, and placed into service. The work shall include furnishing and installing a corporation stop in the new main with saddle, cutting and disconnecting the existing service from the old main, plugging the existing service at the point of connection to the existing water main, and connecting the service pipe to the new corporation stop.

C. Tracer Cable: Furnish and install a direct bury #12 THWN single strand copper electrical cable suitable for direct burial with 4-inch (100 mm) and larger proposed water mains. Cable to be taped or attached in an approved manner to all water mains during installation and prior to backfilling. Cable shall extend continuously up through all test stations to a point 2-feet (600 mm) minimum above finish grade. No field splices permitted except above ground at test stations. All test stations shall be located at each hydrant or determined by the Engineer.

1.7 FIELD QUALITY CONTROL

A. Construction Observation and Inspection: Owner will employ a qualified engineering agency or staff to perform construction observation and inspection.

B. Disinfection of Water Mains

1. Flushing of new mains: There will be no charge by the Owner to the Contractor for the water used to flush the mains, chlorinate, and flush the mains a second time. If it is necessary to flush the mains more than twice as noted, Contractor will be charged by the Owner for water used to flush the mains. Contractor shall provide and install any hose necessary to direct the water being flushed away from any area it might damage.

C. Final Flushing and Testing

1. All samples must be collected by the Contractor and observed by a designated sample collector of the Owner and tested at an EPA approved laboratory. Contractor shall transport the samples to the laboratory and pay all lab fees.

2. Water mains that fail the initial bacterial test shall be flushed again before additional sampling is commenced. If the second sample also fails the bacterial test, disinfection shall be repeated and the main flushed again prior to the third sampling. If the third sample fails the bacterial test, the next step shall be determined by the Owner and the Engineer. All sterilization shall be performed with a designated representative by the Owner in attendance.

Test results shall be mailed or emailed scans to the Engineer. Water sample bottles shall be furnished by the laboratory.

1.8 CLEAN UP

A. Excess Excavation: All excess excavated materials shall become the responsibility of the Contractor for disposal off the construction site as approved by the Engineer except that the Owner reserves the right to have selected excavated materials deposited at designated locations within the City Limits at no additional cost to the Owner.

B. Property of the Owner: All pipe fittings, valves, hydrants and accessories removed from the existing mains shall become the responsibility of the Contractor for disposal off the construction site, except that the Owner reserves the right to have selected excavated materials (including pipe, hydrants, etc.) delivered to a location specified by the Owner at no additional cost to the Owner.

END OF SECTION 46 12 00