



ADDENDUM NO. 3

DATE: September 25, 2026
PROJECT: WWTP CSO 1 Improvements
OWNER: City of Elwood
ENGINEER: Whitaker Engineering

TO: PROSPECTIVE BIDDERS

This Addendum forms a part of the Contract Documents and modifies the original Drawings and Project Manual dated September 1, 2026. The information included in this Addendum shall become a part of the basic Drawings and Project Manual, the same as if originally incorporated therein. The original Drawings and Project Manual shall remain in their entirety, except as modified by Addendum. The items herein supersede information in the Drawings and Project Manual.

Acknowledge receipt of this Addendum in the space provided on the Bid Form. Failure to do so may subject the Bidder to disqualification.

This Addendum consists of three (3) pages and the following attachments:

1. Systems integration scope provided by Toric Engineering (3 pages)
2. Addendum #3 – Electrical (4 pages)
3. Revised Sheet DE101 SITE DEMOLITION PLAN – ELECTRICAL (1 page)
4. Revised Sheet E200 TERTIARY BUILDING BASEMENT PLAN – ELECTRICAL (1 page)
5. Revised Sheet E201 TERTIARY BUILDING SUB-MEZZANINE PLAN – ELECTRICAL (1 page)
6. Revised Sheet E202 TERTIARY BUILDING FIRST FLOOR PLAN – ELECTRICAL (1 page)
7. Revised Sheet E601 ENLARGED LIFT STATION PLAN – ELECTRICAL (1 page)
8. Revised Sheet E701 ELECTRICAL RISER (1 page)
9. Revised Sheet E801 ELECTRICAL SCHEDULES (1 page)
10. Specification Section 09 96 00 – High Performance Coating Systems for Wastewater Treatment Plants (32 pages)

GENERAL CLARIFICATIONS:

1. The systems integration scope (Toric Engineering) is attached. The contractor is responsible for any items in the project not covered by this scope of work. The systems integration allowance amount will be provided via future addendum, and bidders shall enter the allowance amount where indicated on their Bid Form. Note a revised Bid Form was issued with Addendum #2.
 - a. Now that the systems integration scope has been provided, it has been determined that the CSO PLC Control Panel will be capable of controlling the pumps for the wet weather lift station. Therefore, a separate lift station control panel will not be needed.
 - b. Pump manufacturer shall provide all applicable pump protection relays and shall be included in the contractor's bid amount.
 - c. Toric Engineering will provide three (3) local control stations for local pump control.

2. The chemical storage tank volumes indicated on the Drawings are provided as approximate required capacities. The sodium hypochlorite tank may be either a single or double wall tank; have a minimum capacity of 7,600-gallons and a maximum outside diameter of 12'-0". The sodium bisulfate tank shall be a double wall tank; and shall have a minimum capacity of 2,500-gallons, and a maximum outside diameter of 10'-0". All other tank related parameters, e.g. port sizes, fill/outlet pipes, site tube, heat tracing, shall be as identified in the Specification and shown on the Drawings.

CHANGES TO PROCUREMENT & CONTRACTING DOCUMENTS:

1. No changes

CHANGES TO DRAWINGS:

1. SHEET C402 PROPOSED ENLARGED SITE PIPING & UTILITY PLAN
 - a. Revise Yard Piping & Utility Key Note #4 as follows:
46 L.F. of 36" ~~DIP~~ PVC treated storm effluent @ 1.56% slope. See sheet C503 for plan & profile.

CHANGES TO SPECIFICATIONS:

1. Section 33 42 00 Public Storm Utility Drainage Piping
 - a. Revise Section 1.5.A as follows:
 - 1.5.A Perform work in accordance with ~~McCordsville Town~~ **City of Elwood** Standards.
 - b. Revise Section 2.1.A as follows:
 - 2.1.A Furnish materials in accordance with ~~McCordsville Town~~ **City of Elwood** Standards.
 - c. Revise Section 2.2.A as follows:
 - 2.2.A Furnish materials in accordance with ~~McCordsville Town~~ **City of Elwood** Standards.
 - d. Revise Section 2.3.A as follows:
 - 2.3.A Drainage Structures: Precast concrete, furnish materials in accordance with ~~McCordsville Town~~ **City of Elwood** Standards.
 - e. Revise Section 3.4.B as follows:
 - 3.4.B Furnish materials in accordance with ~~McCordsville Town~~ **City of Elwood** Standards.
2. Section 40 05 13 Plant Process Piping
 - a. Revise Section 2.2.B.2.a as follows:
 - 2.2.B.2.a Fittings shall be cast iron or ductile iron. Fittings shall meet the requirements of ANSI/AWWA C110 **or C153**. Design and manufacture fittings for a pressure rating of 200 psi.
3. Section 09 96 00 – High Performance Coating Systems for Wastewater Treatment Plants
 - a. See attached specification section provided in its entirety.
4. Appendix G – Wet Well Submersible Pumps (Grundfos)
 - a. Remove Appendix G2 – Lift Station Control Panel Specifications – Grundfos. This specification is no longer applicable (see systems integration scope provided by Toric Engineering).

5. Appendix U – Mandatory Alternate 7 – Alternate Wet Weather Lift Station Pumps and Control Panel (Flygt Model NP 3400)
 - a. Remove Appendix U2 – Flygt Pump Control System for Sewage Pump Station. This specification is no longer applicable (see systems integration scope provided by Toric Engineering).
6. Appendix V – Mandatory Alternate 8 – Alternate Wet Weather Lift Station Pumps, Control Panel, and Associated Work (WILO Model FA 35.54T)
 - a. Appendix V2 – Mandatory Alternate 8 – WILO Lift Station Control Panel Specifications is no longer applicable and will not be issued by addendum (see systems integration scope provided by Toric Engineering).

END OF ADDENDUM NO. 3



September 22, 2026

RE: Elwood WWTP

Dear Bidding Contractor,

Thank you for the opportunity to quote the Instrumentation and Controls for the Elwood WWTP CSO 1 Improvements project. **This scope IS BABA compliant.** This price includes following:

- **CSO PLC Control Panel Modifications:**
 - Allen Bradley ControlLogix PLC w/ expansion I/O
 - Allen Bradley PanelView Plus touchscreen, 12"
 - Alternating relay
 - Backplane
 - Control relays, as needed
 - Convenience receptacle, 15-amp
 - Fiber optic patch panel
 - Intrinsically safe barrier, analog, 1-channel
 - Intrinsically safe barrier, digital, 2-channel, quantity of two (2)
 - Main circuit breaker
 - Network switch, managed, 6-ethernet ports, 2-fiber ports
 - Power supply, 24vdc, quantity of two (2)
 - Power supply redundancy module
 - Terminal blocks, as needed
 - Time delay relay
 - TVSS, 120vac
 - UPS battery backup
 - Demo of existing equipment
 - Installation of new pre-wired backplane
- **Local Control Stations:**
 - Wet weather pump local control station, type 4x, stainless steel, quantity of three (3)
- **Remote I/O Control Panel (120vac, 1Ø):**
 - Allen Bradley ControlLogix expansion I/O
 - Control relays, as needed
 - Convenience receptacle, 15-amp
 - Enclosure, wall-mount, type 12, painted steel
 - Main circuit breaker
 - Network switch, unmanaged, 5-ethernet ports
 - Power supply, 24vdc, quantity of two (2)
 - Power supply redundancy module
 - Terminal blocks, as needed
 - TVSS, 120vac
 - UPS battery backup
- **Blower Control Panel Modifications:**
 - Fiber-to-ethernet media convertor
 - Fiber optic patch panel



- **Instruments:**
 - Chlorine analyzer, free chlorine
 - Chlorine analyzer, total chlorine
 - Float switch, wet weather wetwell high level
 - Float switch, wet weather wetwell low level
 - Magnetic flow meter, Storm King underflow drain, 8"
 - Pressure transmitter, NPW
 - Pressure transmitter, Storm King
 - Radar level transmitter, effluent chamber
 - Radar level transmitter, wet weather wetwell
 - Ultrasonic flow meter, NPW
- **Wet Weather VFD Control Panel (480vac, 3Ø, (3)-150hp):**
 - Air conditioner, type 12, painted steel
 - Control relays, as needed
 - dV/dT filter, quantity of three (3)
 - Elapsed time meter, quantity of three (3)
 - Enclosure, free-standing, type 12, painted steel
 - Motor circuit breaker, 300-amp, quantity of three (3)
 - Pilot light, 30mm, push-to-test, quantity of twelve (12)
 - Power distribution block
 - Pushbutton, 30mm, quantity of three (3)
 - Selector switch, 30mm, 3-position, quantity of three (3)
 - Terminal blocks, as needed
 - Transformer, 480vac/120, 2kva
 - Variable frequency drive w/ remote keypad, ULH, quantity of three (3)
- **Engineering Services Includes:**
 - Existing control panel modifications
 - Factory construction and testing of control panel
 - On-site startup, one (1) day
 - On-site training, included in startup
 - One (1) year warranty on parts and labor
 - PLC program development
 - SCADA graphics integration
 - Submittals and O&M's created with AutoCAD Electrical and Adobe Acrobat
 - Touchscreen graphics development
- **Excludes the following Items:**
 - Conduit and wire (by others)
 - Fiber optic cable (by others)
 - Fiber optic cable terminations and testing (by others)
 - Installation of new control panels and instruments (by others)
 - Pump protection relays (by pump manufacturer)
 - Terminations of field wires (by others)



Allow sixteen (16) weeks for design and submittals. Allow sixteen (16) weeks for delivery upon approved submittals.

A two (2) week notice is required for startup. All installation including mounting, wiring, and terminations must be completed prior to startup date. Additional trips required from incomplete installation will be \$1,600/day per startup technician and a PO is required prior to scheduling.

Sales tax not included. Please provide Tax Exempt Form.

Control Panels are not subject to return.

Payment Terms: 10% invoiced with submittals, 80% invoiced with material delivery to jobsite, 10% invoiced after startup. Net 30 days; equipment PO only

This quote is valid for 30 days.

This sales quote is subject to and incorporates by reference the Master Terms and Conditions of Sale available at www.toriceng.com/Master-TCs.

Please call with any questions or comments.

Sincerely,

Nathen Burkhardt
Toric Engineering

ADDENDUM #3



DATE: September 25, 2026

PROJECT: City of Elwood WWTP
CS01 Improvements
Elwood, Indiana 46036

ENGINEER: NEO Engineers, LLC.
1135 Shelby Street
Indianapolis, Indiana 46203
(317) 430-4128

The original Drawings and Project Manual, dated September 1, 2026, are amended as indicated herein. The information included in this Addendum shall become a part of the basic Drawings and Project Manual, the same as if originally incorporated therein. The original Drawings and Project Manual shall remain in their entirety, except as modified by this Addendum. The items herein supersede information in the Drawings and Project Manual

1. DRAWINGS

a. Electrical

- i. DE101 SITE DEMOLITION PLAN – ELECTRICAL
 1. See changes to sheet plan notes #2 and #3.
- ii. E200 TERTIARY BUILDING BASEMENT PLAN - ELECTRICAL
 1. See addition of two EWH-1 heaters.
 2. See addition of 'REMOTE I/O PANEL'.
 3. See changes to General Note 'P'.
- iii. E201 TERTIARY BUILDING SUB-MEZZANINE PLAN – ELECTRICAL
 1. See changes to General Note 'P'.
- iv. E202 TERTIARY BUILDING FIRST FLOOR PLAN – ELECTRICAL
 1. See changes to sheet plan note #4.
 2. See change to sheet plan note #8.
 3. See changes to General Note 'P'.
 4. See changes to panel board tag in Generator Room.
 5. See changes to ATS tag in Generator Room.

- v. E601 ENLARGED LIFT STATION PLAN – ELECTRICAL
 - 1. See deletion of 'Lift Station Control Panel'.
 - 2. See addition of sheet plan notes #7 and #8 to drawing.
 - 3. See change to pump motor circuit tags.
 - 4. See addition of disconnect switch DS CRANE (Mandatory Alternate #12).
 - 5. See changes to General Note 'P'.
- vi. E701 ONE-LINE DIAGRAM
 - 1. See changes to 'REVISED ONE-LINE DIAGRAM'.
 - 2. See changes to General Note 'P'.
- vii. E801 ELECTRICAL SCHEDULES
 - 1. See change of panel board tag from MSB to MDS.
 - 2. See change to circuit breaker size feeding MCC-N1.
 - 3. See changes to Electrical Connection to Mechanical Equipment Schedule.
 - 4. See changes to panel schedule LTB.
 - 5. See changes to panel schedule HDP-N.
 - 6. See addition of electric heater schedule.

2. SPECIFICATIONS

a. Electrical

- i. 26 10 00 Variable Frequency Motor Controllers – Reference 2.01(M), add Yaskawa as an approved manufacturer.

3. CLARIFICATIONS

a. VFD's shall be provided by Instrumentation Contractor.

b. QUESTIONS FROM CONTRACTORS

- i. What work does the EC have on Sheet DE101? Would AEP be removing overhead transformers, three phase drop, secondary service drop and utility meter mounted on transformer pole? Please clarify scope.
 - Response: Electrical contractor shall coordinate with AEP for the removal of the pole mounted transformers, three phase drop/secondary service drop, and utility meter. See sheet plan note #1 on DE101.
- ii. What work does EC have regarding the Generator, ATS, Day Tank and Buried Diesel Fuel Tank? Are we to remove these from the property or simply disconnect electrical only?
 - Response: General Contractor is responsible for the complete demolition of the existing generators, ATS', Day Tanks, and Buried Diesel Fuel Tanks including disposal of such. The General Contractor shall determine which trades are best suited to complete such work.
- iii. Drawing E601 notes 7 & 8 are not used. Please clarify.
 - See attached revised drawing E601.

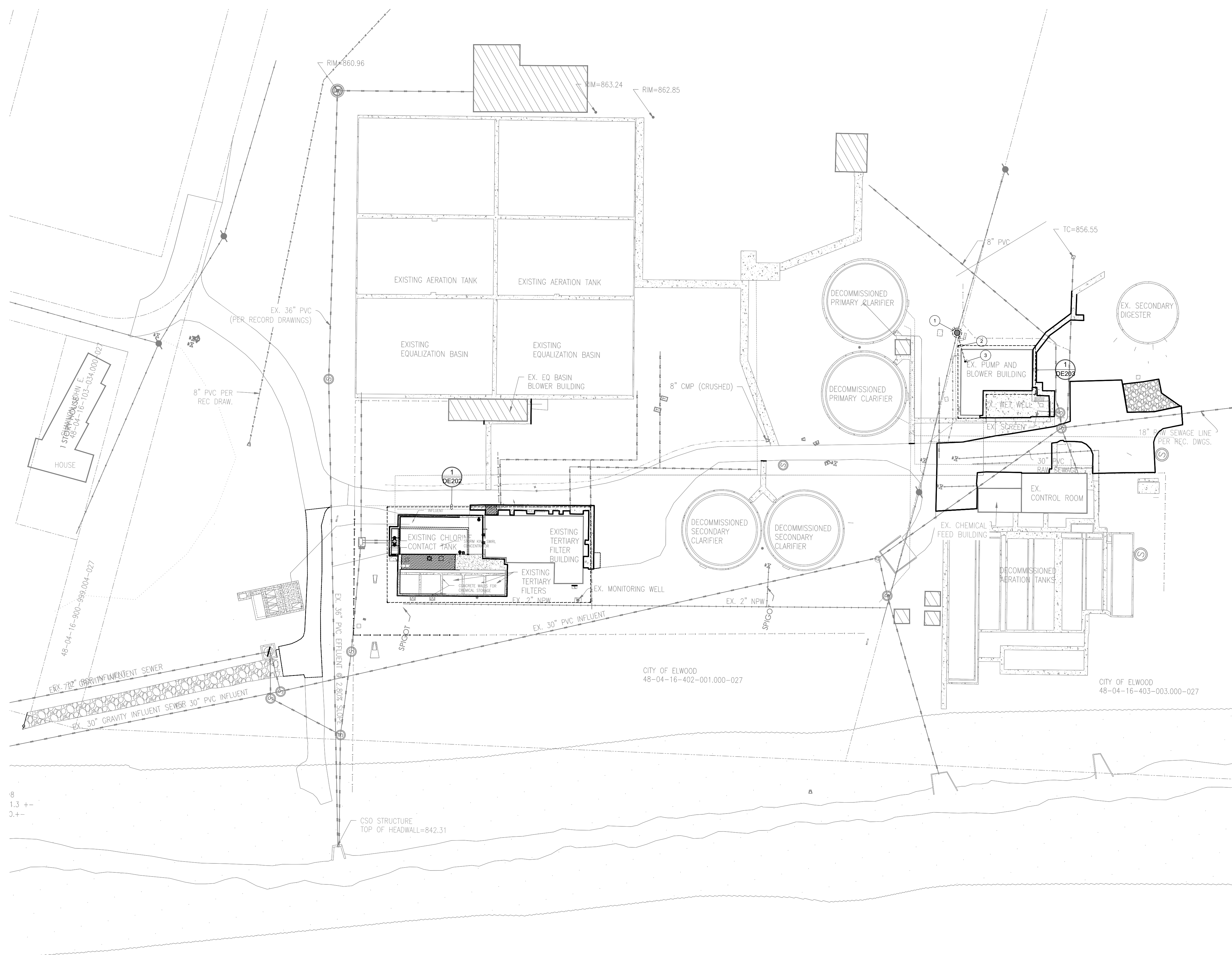
- iv. Panel schedule HDP-N on drawing E-801 shows WWSP's on circuit 2, 3, & 4 but home run symbol for WWSP's on drawing E601 reads, "HDPLS." Panel HDPLS does not exist. Please clarify.
 - See attached revised drawing E601.
- v. One line diagram shows disconnects and VFDS for WWSP's but drawing E601 nor their related callout details (2/E903 & 3/E903) show these items. Are VFD's furnished by others?
 - VFD's are furnished by Instrumentation Contractor and are installed by Electrical Contractor. See plan note #4 on sheet E202.
- vi. One line diagram shows symbol "TVSS" but this symbol is nowhere on drawings or on symbol sheet. Please Clarify.
 - TVSS – Transient Voltage Surge Suppression. See specification section 26 43 13.
- vii. One line diagram shows a new Transformer "TLS" and new panel "LS" but these are not shown on the drawings. Please clarify?
 - See attached revised drawing E701.
- viii. Drawing E202 shows Panel HDP-S and ATS-S. Are these to be labeled as "HDP-N" and "ATS-N" per the one-line diagram? There is already an ATS-S in the pump building. Please clarify.
 - See attached revised drawing E202.
- ix. Drawing E601 shows SCP as a panel but the one-line diagram shown SCP as a disconnect. Please clarify.
 - SCP is the Screen Control Panel which is furnished by the screen manufacturer and installed by the Electrical Contractor.
- x. Drawing E601 calls out detail 8 on drawing E902 which shows a 9-cell conduit trench detail with 4" conduits. However, the one-line diagram and feeder schedule show these same devices receiving several other conduit sizes (see feeder 2, 8, and 12). Please clarify.
 - Install all conduits per detail 8/E902.
- xi. Is EC to provide control cabinets, control wire, label the cable, terminate and commission? Or is all this being done by Toric? Please clarify scope. If we are to do instrumentation, please provide I/C drawings.
 - Control cabinets are furnished by Instrumentation Contractor and installed by Electrical Contractor. All terminations are by Electrical Contractor. See General Note 'P' on sheets E200, E201, and E202.
- xii. What areas are Class 1 Div 1 or are needing Stainless Steel or Aluminum conduit/fittings?
 - The wet well for the lift station is considered Class 1 Div 1. See Detail 2 and 3 on sheet E903 for conduits that are required to be rigid aluminum. There is no stainless-steel conduit called for on this project.

- xiii. What work does the EC have concerning the backup float switches and vegaplug c22 ultrasonic level sensor shown on Drawing E601? No details or information is given?
 - All switches and sensors are furnished by Instrumentation Contractor and installed by Electrical Contractor. Electrical Contractor shall verify final location in field with Instrumentation Contractor prior to rough-in.
- xiv. Detail 2 on drawing E903 does not look like what is shown on Drawing E601. Please clarify.
 - Detail 2/E903 TYPICAL LIFT STATION CONTROL PANEL ELEVATION is a typical detail and is not meant to be exact.

ATTACHMENTS

DE101, E200, E201, E202, E601, E701, E801

END OF ADDENDUM #3 (ELECTRICAL)



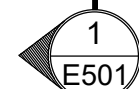
EXISTING ELECTRICAL EQUIPMENT WAS OBTAINED FROM SIMILAR BUILDING DRAWINGS AND COURSY FIELD OBSERVATION, HOWEVER, ACTUAL "AS-BUILT" DRAWINGS WERE NOT AVAILABLE. CERTAIN INFORMATION CONCERNING THE LOCATION OF THE EXISTING ELECTRICAL WORK MUST BE VERIFIED IN THE FIELD TO DETERMINE THE EXACT LOCATIONS, DEPTH, SIZE, ETC. PRIOR TO STARTING CONSTRUCTION. ANY CONFLICT BETWEEN THESE PLANS AND THE ACTUAL CONDITIONS SHALL BE REPORTED IMMEDIATELY TO THE ARCHITECT FOR VERIFICATION AND/OR CORRECTION.

1. CONNECT NEW LIGHT FIXTURE TO EXISTING LIGHTING BRANCH CIRCUIT. MOUNT CENTER OF FIXTURE +7'-6" ABOVE FINISHED FLOOR.
2. CONNECT NEW TRANSFORMER TR3 TO EXISTING FEEDER CIRCUIT.
3. CONNECT NEW NON-POTABLE WATER PUMP SKID TO EXISTING FEEDER CIRCUIT. PROVIDE NEW CONDUIT AND CONDUCTOR AS REQUIRED.
4. SEE SHEET E201 FOR SECOND "A" LEG SWITCH LOCATION AND ADDITIONAL FIXTURES CONTROLLED BY SWITCH.
5. HOMERUN WITH 1" CONDUIT, UNLESS NOTED OTHERWISE, AND MANUFACTURERS RECOMMENDED CONTROL CABLE TO SCADA CONTROL PANEL.
6. SODIUM BISULFITE PUMP CONTROLS. VERIFY FINAL LOCATION IN FIELD WITH SCADA SYSTEM INSTALLER PRIOR TO ROUGH-IN.
7. SODIUM HYPOCHLORITE PUMP CONTROLS. VERIFY FINAL LOCATION IN FIELD WITH SCADA SYSTEM INSTALLER PRIOR TO ROUGH-IN.
8. EFFLUENT SAMPLER RECEPTACLE. MOUNT CENTER OF DEVICE +4'-0" AFF. VERIFY FINAL LOCATION IN FIELD WITH WHITAKER ENGINEERING PRIOR TO ROUGH-IN.
9. PRESSURE TRANSDUCER LOCATION. VERIFY FINAL LOCATION IN FIELD WITH WHITAKER ENGINEERING PRIOR TO ROUGH-IN.
10. LINE POWERED DISPLAY. VERIFY FINAL LOCATION IN FIELD WITH WHITAKER ENGINEERING PRIOR TO ROUGH-IN.
11. FREE CHLORINE MONITOR. VERIFY FINAL LOCATION IN FIELD WITH WHITAKER ENGINEERING PRIOR TO ROUGH-IN.
12. CHLORINE MONITOR CONTROL PANEL. VERIFY FINAL LOCATION IN FIELD WITH WHITAKER ENGINEERING PRIOR TO ROUGH-IN.
13. TOTAL CHLORINE MONITOR. VERIFY FINAL LOCATION IN FIELD WITH WHITAKER ENGINEERING PRIOR TO ROUGH-IN.

- A. SEE SHEET E001 FOR SYMBOLS AND ABBREVIATIONS.
- B. SEE EX00 SHEETS FOR ELECTRICAL SCHEDULES.
- C. SEE EX00 SHEETS FOR ELECTRICAL DETAILS.
- D. WIRING SYSTEM SHALL BE CONDUIT AND CONDUCTOR UNLESS NOTED OTHERWISE. USE SOLID CONDUCTOR FOR SIZE #10 AWG AND SMALLER. USE STRANDED CONDUCTOR FOR LARGER SIZES.
- E. ALL WORK SHALL COMPLY WITH ALL NATIONAL, STATE, AND LOCAL CODES AND ORDINANCES PERTAINING TO THE WORK ON THIS PROJECT.
- F. EXPOSED CONDUIT SHALL BE RUN PARALLEL TO AND AT RIGHT ANGLES TO BUILDING FINES.
- G. ALL EXTERIOR EQUIPMENT AND DEVICES SHALL BE WEATHER PROOF AND RAIN TIGHT.
- H. COORDINATE INSTALLATION OF LIGHT FIXTURES WITH MECHANICAL EQUIPMENT, DIFFUSERS, SUPPORTS, PIPING, DUCTWORK, AND STRUCTURAL PLANS PRIOR TO ROUGH-IN OF FIXTURES.
- I. LOCATE CEILING MOUNTED OCCUPANCY SENSORS TO PROVIDE COMPLETE AREA OF COVERAGE OF SPACE CONTROLLED. SELECT PROPER SENSOR COORDINATE PATTERN FROM MANUFACTURERS PRODUCT DATA. ADDITIONAL SENSORS REQUIRED DUE TO LACK OF COVERAGE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND MANUFACTURER. SENSORS SHALL INCLUDE ALL POWER SUPPLIES AND RELAYS NECESSARY FOR PROPER OPERATION.
- J. CONTRACT DOCUMENTS CONSIST OF BOTH THE PROJECT MANUAL AND DRAWINGS AND BOTH ARE MEANT TO BE COMPLEMENTARY- ANYTHING APPEARING ON EITHER MUST BE EXECUTED THE SAME AS IF SHOWN ON BOTH.
- K. CONTRACTOR SHALL THOROUGHLY EXAMINE THE WORK OF OTHER TRADES PRIOR TO SUBMITTING A BID PROPOSAL.
- L. CONTRACTORS SHALL PROVIDE UPDATED CIRCUIT DIRECTORIES FOR EXISTING PANEL BOARDS IDENTIFYING THE PROPER LOADS FED BY THE CIRCUITS (NEW AND EXISTING) UPON COMPLETION OF THE WORK.
- M. THE PROJECT IS SUBJECT TO BABA REQUIREMENTS. SEE FRONT END SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
- N. SEE CIVIL SHEETS FOR ADDITIONAL WORK BY ELECTRICAL CONTRACTOR.
- O. SEE CIVIL SHEET D401 FOR CONTROL LOGIC TABLE.

THE SYSTEM INTEGRATION WILL BE PERFORMED BY THE OWNER'S EXISTING SYSTEM INTEGRATOR (SI). TORIC ENGINEERING, THE SI'S CONTROL PANEL SCOPE FOR THIS PROJECT WILL INCLUDE THE WET WEATHER VFD CONTROL PANEL, CSO PLC CONTROL PANEL, (LOCATED IN EXISTING PLC CONTROL PANEL), AND THE BASEMENT REMOTE I/O CONTROL PANEL. THE SI WILL ALSO FURNISH THE WET WEATHER EFFLUENT FLOW INSTRUMENTS, CHEMICAL BULK TANK LEVEL INSTRUMENTS, EFFLUENT FLOW INSTRUMENTS, AND CHLORINE ANALYZERS. THE ELECTRICAL CONTRACTOR SHALL INSTALL THE CONTROL PANELS FURNISHED BY THE SI AND THE WET WEATHER WET WELL INSTRUMENTS, CHEMICAL BULK TANK LEVEL INSTRUMENTS, EFFLUENT FLOW INSTRUMENTS, AND CHLORINE ANALYZERS. ALL APPLICATION ENGINEERING WILL BE PERFORMED BY TORIC. INSTALLATION OF CONDUIT, CONDUCTOR, CABLE, FIBER, AND TERMINATION OF SUCH WILL BE PERFORMED BY THE ELECTRICAL CONTRACTOR. ELECTRICAL CONTRACTOR SHALL COORDINATE BETWEEN ALL DISCIPLINES TO PROVIDE A COMPLETE AND TOTAL PACKAGE.

NOTE:



1

0 4' 8' 16' SCALE: 1/8" = 1'-0"

FIELD VERIFY:
EXISTING ELECTRICAL EQUIPMENT WAS OBTAINED FROM SIMILAR BUILDING DRAWINGS AND CURSORY FIELD OBSERVATION. HOWEVER, ACTUAL "AS-BUILT" DRAWINGS WERE NOT AVAILABLE. CERTAIN INFORMATION CONCERNING THE LOCATION OF THE EXISTING ELECTRICAL WORK MUST BE VERIFIED IN THE FIELD TO DETERMINE THE EXACT LOCATIONS, DEPTH, SIZE, ETC. PRIOR TO STARTING CONSTRUCTION. ANY CONFLICT BETWEEN THESE PLANS AND THE ACTUAL CONDITIONS SHALL BE REPORTED IMMEDIATELY TO THE ARCHITECT FOR VERIFICATION AND/OR CORRECTION.

SHEET PLAN NOTES

- CONNECT NEW LIGHT FIXTURE TO EXISTING LIGHTING BRANCH CIRCUIT.
- SEE SHEET E200 FOR SECOND 'B' LEG SWITCH AND ADDITIONAL FIXTURES CONTROLLED BY SWITCH.
- FUTURE SODIUM BISULFITE TANK LEVEL SENSOR. VERIFY FINAL LOCATION IN FIELD WITH SCADA SYSTEM INSTALLER PRIOR TO ROUGH-IN.
- FUTURE SODIUM HYPOCHLORITE TANK LEVEL SENSOR. VERIFY FINAL LOCATION IN FIELD WITH SCADA SYSTEM INSTALLER PRIOR TO ROUGH-IN.
- HOME RUN WITH 1" CONDUIT, UNLESS NOTED OTHERWISE, WITH MANUFACTURER'S RECOMMENDED CONTROL CABLE TO SCADA CONTROL PANEL.
- POWER SUPPLY TO TANK HEATER. VERIFY FINAL LOCATION IN FIELD WITH TANK INSTALLER PRIOR TO ROUGH-IN.
- ELECTRICAL CONTRACTOR SHALL PROVIDE HEAT TRACE AND INSULATION ON PROCESS PIPING AS SHOWN AND DESCRIBED IN SPECIFICATIONS.

GENERAL NOTES

- SEE SHEET E001 FOR SYMBOLS AND ABBREVIATIONS.
- SEE E80X SHEETS FOR ELECTRICAL SCHEDULES.
- SEE E90X SHEETS FOR ELECTRICAL DETAILS.
- WIRING SYSTEM SHALL BE CONDUIT AND CONDUCTOR UNLESS NOTED OTHERWISE. USE SOLID CONDUCTOR FOR SIZE #10 AWG AND SMALLER. USE STRANDED CONDUCTOR FOR LARGER SIZES.
- ALL WORK SHALL COMPLY WITH ALL NATIONAL, STATE, AND LOCAL CODES AND ORDINANCES PERTAINING TO THE WORK ON THIS PROJECT.
- EXPOSED CONDUIT SHALL BE RUN PARALLEL TO AND AT RIGHT ANGLES TO BUILDING LINES.
- ALL EXTERIOR EQUIPMENT AND DEVICES SHALL BE WEATHER PROOF AND RAIN TIGHT.
- COORDINATE INSTALLATION OF LIGHT FIXTURES WITH MECHANICAL EQUIPMENT, DIFFUSERS, SUPPORTS, PIPING, DUCTWORK, AND STRUCTURAL PLANS PRIOR TO ROUGH-IN OF FIXTURES.
- LOCATE CEILING MOUNTED OCCUPANCY SENSORS TO PROVIDE COMPLETE AREA OF COVERAGE OF SPACE CONTROLLED. SELECT PROPER SENSOR COVERAGE PATTERN FROM MANUFACTURER'S PRODUCT DATA. ADDITIONAL SENSORS REQUIRED DUE TO LACK OF COVERAGE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND MANUFACTURER. SENSORS SHALL INCLUDE ALL POWER SUPPLIES AND RELAYS NECESSARY FOR PROPER OPERATION.
- CONTRACT DOCUMENTS CONSIST OF BOTH THE PROJECT MANUAL AND DRAWINGS AND BOTH ARE MEANT TO BE COMPLEMENTARY - ANYTHING APPEARING ON EITHER MUST BE EXECUTED THE SAME AS IF SHOWN ON BOTH.
- CONTRACTOR SHALL THOROUGHLY EXAMINE THE WORK OF OTHER TRADES PRIOR TO SUBMITTING A BID PROPOSAL.
- CONTRACTORS SHALL PROVIDE UPDATED CIRCUIT DIRECTORIES FOR EXISTING PANEL BOARDS IDENTIFYING THE PROPER LOADS FED BY THE CIRCUITS (NEW AND EXISTING) UPON COMPLETION OF THE WORK.
- THE PROJECT IS SUBJECT TO BABA REQUIREMENTS. SEE FRONT END SPECIFICATIONS FOR ADDITIONAL INFORMATION.
- SEE CIVIL SHEETS FOR ADDITIONAL WORK BY ELECTRICAL CONTRACTOR.
- SEE CIVIL SHEET D401 FOR CONTROL LOGIC TABLE.
- THE SYSTEM INTEGRATION WILL BE PERFORMED BY THE OWNER'S EXISTING SYSTEM INTEGRATOR (SI), TORIC ENGINEERING. THE SIS CONTROL PANEL SCOPE FOR THIS PROJECT WILL INCLUDE THE WET WEATHER VFD CONTROL PANEL, CSO PLC CONTROL PANEL (LOCATED IN EXISTING PLC CONTROL PANEL), AND THE BASEMENT REMOTE I/O CONTROL PANEL. THE SI WILL ALSO FURNISH THE WET WEATHER WET WELL INSTRUMENTS, CHEMICAL BULK TANK LEVEL INSTRUMENTS, EFFLUENT FLOW INSTRUMENTS, AND CHLORINE ANALYZERS. THE ELECTRICAL CONTRACTOR SHALL INSTALL THE CONTROL PANELS FURNISHED BY THE SI AND THE WET WEATHER WET WELL INSTRUMENTS, CHEMICAL BULK TANK LEVEL INSTRUMENTS, EFFLUENT FLOW INSTRUMENTS, AND CHLORINE ANALYZERS. ALL APPLICATION ENGINEERING WILL BE PERFORMED BY SI. INSTALLATION OF CONDUIT, CONDUCTORS, CABLES, FIBER, AND TERMINATIONS OF SUCH WILL BE PERFORMED BY THE ELECTRICAL CONTRACTOR. ELECTRICAL CONTRACTOR SHALL COORDINATE BETWEEN ALL DISCIPLINES TO PROVIDE A COMPLETE AND TOTAL PACKAGE.

REVISIONS:		
1	ADDENDUM #1	09/10/2026
2	ADDENDUM #3	09/25/2026

SHEET TITLE:	TERTIARY BUILDING SUB-MEZZANINE PLAN - ELECTRICAL
	CITY OF ELWOOD WWTP CSO1 IMPROVEMENTS

CORNERSTONE ENGINEERING INC.
CONSULTANT:
2214 PLANTSIDE DRIVE
LOUISVILLE, KY 40299
(502) 493-2717 - Corporate
(317) 324-1276 - Fax

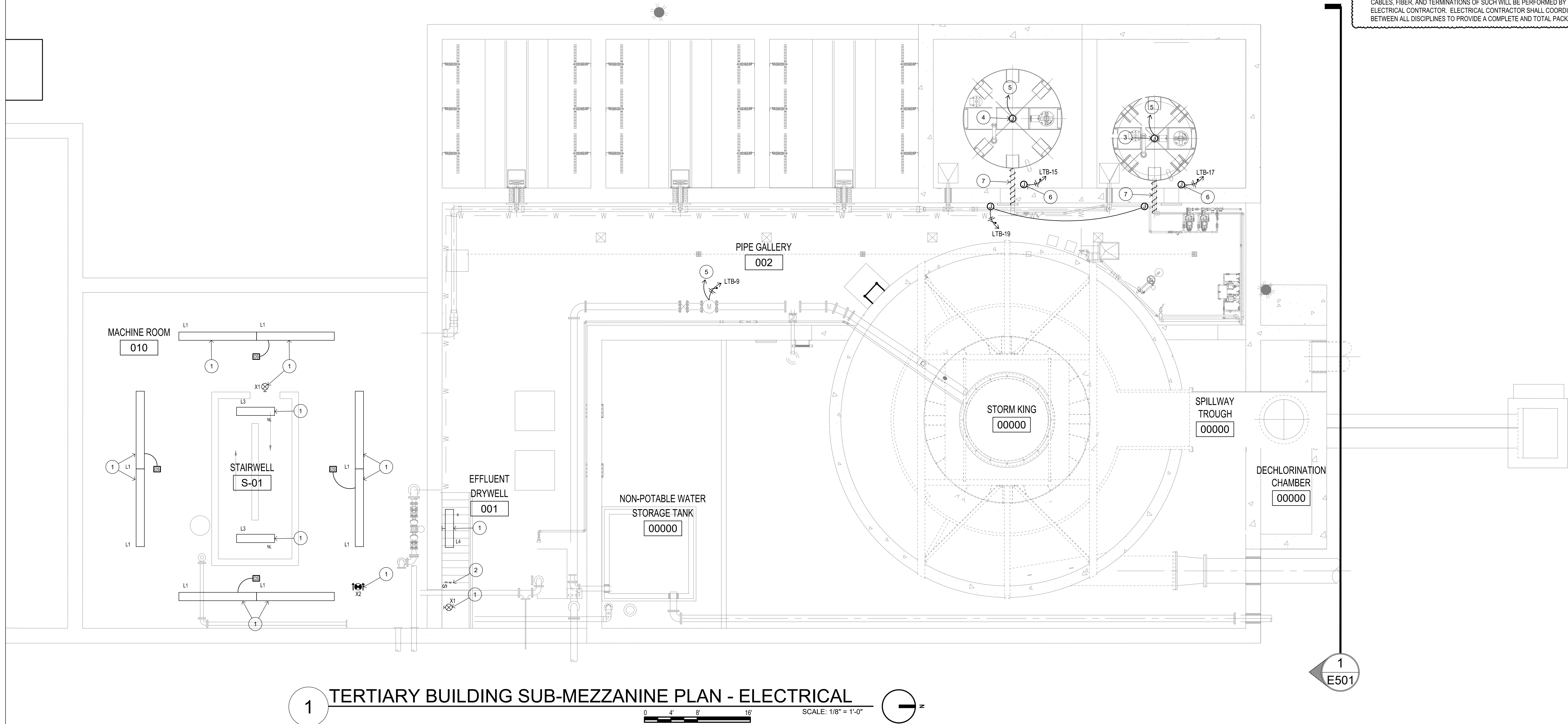
NEO ENGINEERS
CONSULTANT:
1135 SHELBY STREET
INDIANAPOLIS, IN 46201
(317) 430-4128 - Corporate
(507) 604-6522 - Fax

WHITAKER ENGINEERING
8606 ALLISONVILLE RD, SUITE 235
INDIANAPOLIS, IN 46250
E-MAIL: CWHITAKER@WHITAKERENGINEERING.COM

THOMAS M. REDEP, JR.
NO. 11100167
STATE OF INDIANA
PROFESSIONAL ENGINEER
CERTIFIED BY:
THIS DRAWING AND THE IDEAS, DESIGNS AND CONCEPTS CONTAINED HEREIN ARE THE EXCLUSIVE INTELLECTUAL PROPERTY OF WHITAKER ENGINEERING CORPORATION, AND ARE NOT TO BE USED OR REPRODUCED, IN WHOLE OR IN PART, WITHOUT THE WRITTEN CONSENT OF WHITAKER ENGINEERING CORPORATION.
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OWNER INFORMATION:
CITY OF ELWOOD
UTILITY OFFICE
1505 SOUTH B ST
ELWOOD, IN 46036

SHEET LABEL	SHEET No. 69	OF: 78
E201	PROJECT No.: 24172	
CHECKED BY: TMR		
DRAWN BY: STAFF	DATE: 09/03/2026	



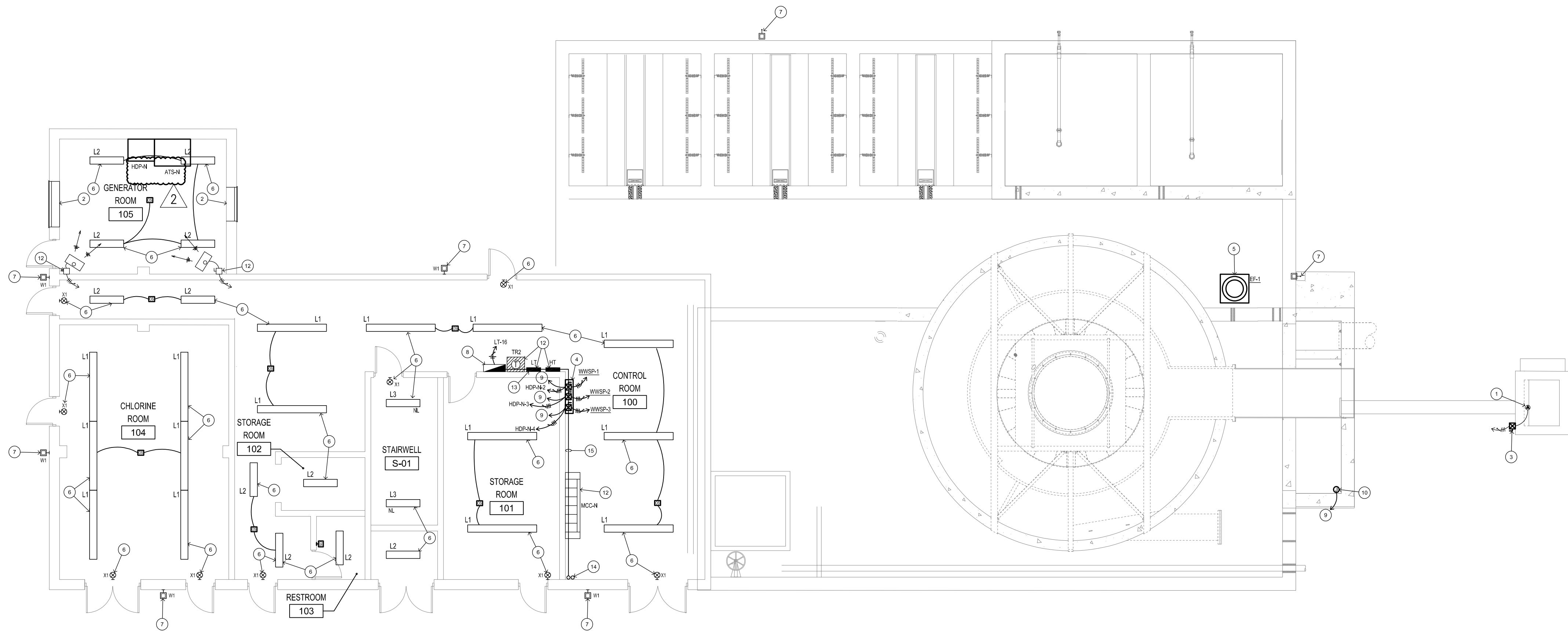
FIELD VERIFY:
EXISTING ELECTRICAL EQUIPMENT WAS OBTAINED FROM SIMILAR BUILDING DRAWINGS AND CUSORY FIELD OBSERVATION, HOWEVER. ACTUAL "AS-BUILT" DRAWINGS WERE NOT AVAILABLE. CERTAIN INFORMATION CONCERNING THE LOCATION OF THE EXISTING ELECTRICAL WORK MUST BE VERIFIED IN THE FIELD TO DETERMINE THE EXACT LOCATIONS, DEPTH, SIZE, ETC. PRIOR TO STARTING CONSTRUCTION. ANY CONFLICT BETWEEN THESE PLANS AND THE ACTUAL CONDITIONS SHALL BE REPORTED IMMEDIATELY TO THE ARCHITECT FOR VERIFICATION AND/OR CORRECTION.

SHEET PLAN NOTES

1. RECONNECT EXISTING MECHANICAL EQUIPMENT TO NEW DISCONNECT SWITCH.
2. CLOSE DAMPERS AND SEAL WITH 2" RIGID INSULATION AND 1/2" PLYWOOD. PAINT PLYWOOD WITH A MINIMUM OF TWO COATS OF LIGHT COLORED FIRE RETARDANT PAINT. SEAL PERIMETER WITH CAULK.
3. PROVIDE NEW COMBINATION MOTOR STARTER/DISCONNECT SWITCH FOR SLUICE GATE MOTOR OPERATOR. CONNECT TO EXISTING FEEDER CIRCUIT.
4. VFD CONTROL PANEL FURNISHED BY SYSTEMS INTEGRATOR AND INSTALLED BY ELECTRICAL CONTRACTOR. VFD'S ARE FURNISHED WITH THE CONTROL PANEL. ALL TERMINATIONS IN CONTROL PANEL ARE BY ELECTRICAL CONTRACTOR.
5. EXHAUST FAN FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR. EXTEND BRANCH CIRCUIT AS REQUIRED.
6. CONNECT NEW LIGHT FIXTURE TO EXISTING LIGHTING BRANCH CIRCUIT.
7. CONNECT NEW LIGHT FIXTURE TO EXISTING LIGHTING BRANCH CIRCUIT. RE-FEED CIRCUIT THROUGH LIGHTING CONTRACTOR. SEE ELECTRICAL DETAILS FOR ADDITIONAL INFORMATION.
8. CSO PLC CONTROL PANEL. ALL TERMINATIONS IN PANEL SHALL BE BY ELECTRICAL CONTRACTOR.
9. NOT USED.
10. DECHLORINATION CHAMBER/EFFLUENT CHAMBER ULTRASONIC LEVEL SENSOR.
11. NOT USED.
12. EXISTING ELECTRICAL EQUIPMENT TO REMAIN.
13. PROVIDE (2) NEW 20A-1P CIRCUIT BREAKERS FOR EXISTING KINNEY CALSS CTL PANEL BOARD #BG-105315.
14. 4" CONDUIT STUBBED 4" ABOVE FINISHED FLOOR AND CAPPED.
15. 4" CONDUIT WITH SCADA INSTALLERS RECOMMENDED CABLE.
16. ELECTRICAL CONTRACTOR SHALL PROVIDE HEAT TRACE AND INSULATION ON PIPING AS INDICATED.

GENERAL NOTES

- A. SEE SHEET E001 FOR SYMBOLS AND ABBREVIATIONS.
- B. SEE E00X SHEETS FOR ELECTRICAL SCHEDULES.
- C. SEE E00X SHEETS FOR ELECTRICAL DETAILS.
- D. WIRING SYSTEM SHALL BE CONDUIT AND CONDUCTOR UNLESS NOTED OTHERWISE. USE SOLID CONDUCTOR FOR SIZE #10 AWG AND SMALLER. USE STRANDED CONDUCTOR FOR LARGER SIZES.
- E. ALL WORK SHALL COMPLY WITH ALL NATIONAL, STATE, AND LOCAL CODES AND ORDINANCES PERTAINING TO THE WORK ON THIS PROJECT.
- F. EXPOSED CONDUIT SHALL BE RUN PARALLEL TO AND AT RIGHT ANGLES TO BUILDING LINES.
- G. ALL EXTERIOR EQUIPMENT AND DEVICES SHALL BE WEATHER PROOF AND RAIN TIGHT.
- H. COORDINATE INSTALLATION OF LIGHT FIXTURES WITH MECHANICAL EQUIPMENT, DIFFUSERS, SUPPORTS, PIPING, DUCTWORK, AND STRUCTURAL PLANS PRIOR TO ROUGH-IN OF FIXTURES.
- I. LOCATE CEILING MOUNTED OCCUPANCY SENSORS TO PROVIDE COMPLETE AREA OF COVERAGE OF SPACE CONTROLLED. SELECT PROPER SENSOR COVERAGE PATTERN FROM MANUFACTURERS PRODUCT DATA. ADDITIONAL SENSORS REQUIRED DUE TO LACK OF COVERAGE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND MANUFACTURER. SENSORS SHALL INCLUDE ALL POWER SUPPLIES AND RELAYS NECESSARY FOR PROPER OPERATION.
- J. CONTRACT DOCUMENTS CONSIST OF BOTH THE PROJECT MANUAL AND DRAWINGS AND BOTH ARE MEANT TO BE COMPLEMENTARY - ANYTHING APPEARING ON EITHER MUST BE EXECUTED THE SAME AS IF SHOWN ON BOTH.
- K. CONTRACTOR SHALL THOROUGHLY EXAMINE THE WORK OF OTHER TRADES PRIOR TO SUBMITTING A BID PROPOSAL.
- L. CONTRACTORS SHALL PROVIDE UPDATED CIRCUIT DIRECTORIES FOR EXISTING PANEL BOARDS IDENTIFYING THE PROPER LOADS FED BY THE CIRCUITS (NEW AND EXISTING) UPON COMPLETION OF THE WORK.
- M. THE PROJECT IS SUBJECT TO BABA REQUIREMENTS. SEE FRONT END SPECIFICATIONS FOR ADDITIONAL INFORMATION.
- N. SEE CIVIL SHEETS FOR ADDITIONAL WORK BY ELECTRICAL CONTRACTOR.
- O. SEE CIVIL SHEET D401 FOR CONTROL LOGIC TABLE.
- P. THE SYSTEM INTEGRATION WILL BE PERFORMED BY THE OWNER'S EXISTING SYSTEM INTEGRATOR (SI). TORIC ENGINEERING, THE SI'S CONTROL PANEL SCOPE FOR THIS PROJECT WILL INCLUDE THE WET WEATHER VFD CONTROL PANEL, CSO PLC CONTROL PANEL (LOCATED IN EXISTING PLC CONTROL PANEL), AND THE BASEMENT REMOTE I/O CONTROL PANEL. THE SI WILL ALSO FURNISH THE WET WEATHER WET WELL INSTRUMENTS, CHEMICAL BULK TANK LEVEL INSTRUMENTS, EFFLUENT FLOW INSTRUMENTS, AND CHLORINE ANALYZERS. THE ELECTRICAL CONTRACTOR SHALL INSTALL THE CONTROL PANELS FURNISHED BY THE SI AND THE WET WEATHER WET WELL INSTRUMENTS, CHEMICAL BULK TANK LEVEL INSTRUMENTS, EFFLUENT FLOW INSTRUMENTS, AND CHLORINE ANALYZERS. ALL APPLICATION ENGINEERING WILL BE PERFORMED BY SI. INSTALLATION OF CONDUIT, CONDUCTORS, CABLES, FIBER, AND TERMINATIONS OF SUCH WILL BE PERFORMED BY THE ELECTRICAL CONTRACTOR. ELECTRICAL CONTRACTOR SHALL COORDINATE BETWEEN ALL DISCIPLINES TO PROVIDE A COMPLETE AND TOTAL PACKAGE.



1 TERTIARY BUILDING FIRST FLOOR PLAN - ELECTRICAL

REVISIONS:
1 ADDENDUM #1 09/10/2026
2 ADDENDUM #3 09/25/2026

SHEET TITLE:
TERTIARY BUILDING
FIRST FLOOR PLAN - ELECTRICAL

PROJECT TITLE:
CITY OF ELWOOD WWTP
CSO1 IMPROVEMENTS

CORNERSTONE
ENGINEERING INC.
Engineering. Architecture. Construction.

CONSULTANT:
2214 PLANTSIDE DRIVE
LOUISVILLE, KY 40299
(502) 493-2717 - Corporate
(317) 324-1276 - Fax

NEO
ENGINEERS
1135 SHELBY STREET - INDIANAPOLIS, IN 46201-317-430-4128 neoengineers.com

CONSULTANT:
1135 SHELBY STREET
INDIANAPOLIS, IN 46201
(317) 430-4128 - Corporate
(507) 804-6522 - Fax

WHITAKER
ENGINEERING
8606 ALLISONVILLE RD, SUITE 235
INDIANAPOLIS, IN 46250
E-MAIL: CWHITAKER@WHITAKERENGINEERING.COM

THOMAS M. ROEDER, JR.
REGISTERED PROFESSIONAL ENGINEER
NO. 11100167
STATE OF INDIANA
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OWNER INFORMATION:
CITY OF ELWOOD
UTILITY OFFICE
1505 SOUTH B ST
ELWOOD, IN 46036

SHEET LABEL
E202

SHEET No.
70

PROJECT No.:
24172

OF:
78

CHECKED BY: TMR

DRAWN BY: STAFF DATE: 09/03/2026

GENERAL NOTES

- A. SEE SHEET E001 FOR SYMBOLS AND ABBREVIATIONS.
B. SEE E00X SHEETS FOR ELECTRICAL SCHEDULES.
C. SEE E00X SHEETS FOR ELECTRICAL DETAILS.
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O. SEE CIVIL SHEET D401 FOR CONTROL LOGIC TABLE.
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SHEET PLAN NOTES

- HOME RUN WITH 2" CONDUIT WITH MANUFACTURER'S RECOMMENDED CONTROL CABLE TO SCADA CONTROL PANEL.
- WET WELL SUMP PUMP, WET WELL FLOAT CONTROL, AND SCREEN CONTROL CABLES.
- UNDERGROUND ELECTRICAL DUCTBANK WITH (9) 4" CONDUITS. SEE ELECTRICAL DETAILS FOR ADDITIONAL INFORMATION.
- 36" X 60" X 36" IN-GRADE PULL BOX. BASIS OF DESIGN SHALL BE EQUAL TO QUAZITE #B1C366036A WITH A BOLT ON TIER 22 COVER WITH THE LEGEND "ELECTRIC".
- SEE SHEET E101 FOR CONTINUATION.
- PROVIDE HEAT TRACE ON 3/4" NON-POTABLE WATER LINE FROM 4 FEET BELOW GRADE TO TOP OF SCREEN. PROVIDE INSULATION AND SCHEDULE 40 PVC CARRIER PIPE. TOTAL LENGTH OF PIPE TO BE PROTECTED SHALL BE LESS THAN OR EQUAL TO 15 FEET. VERIFY FINAL LOCATION WITH SCREEN SUBMITTALS.
- SCREEN CONTROL PANEL.
- WASHER/COMPACTOR DISCONNECT SWITCH.
- CRANE DISCONNECT SWITCH (MANDATORY ALTERNATE #12).
- HOME RON TO ASSOCIATED VFD. SEE SHEET E202 FOR VFD LOCATION.

FIELD VERIFY:

EXISTING ELECTRICAL EQUIPMENT WAS OBTAINED FROM SIMILAR BUILDING DRAWINGS AND CURSORY FIELD OBSERVATION. HOWEVER, ACTUAL "AS-BUILT" DRAWINGS WERE NOT AVAILABLE. CERTAIN INFORMATION CONCERNING THE LOCATION OF THE EXISTING ELECTRICAL WORK MUST BE VERIFIED IN THE FIELD TO DETERMINE THE EXACT LOCATIONS, DEPTH, SIZE, ETC. PRIOR TO STARTING CONSTRUCTION. ANY CONFLICT BETWEEN THESE PLANS AND THE ACTUAL CONDITIONS SHALL BE REPORTED IMMEDIATELY TO THE ARCHITECT FOR VERIFICATION AND/OR CORRECTION.

REVISIONS:

1 ADDENDUM #3

09/25/2026

ENLARGED LIFT
STATION PLAN - ELECTRICAL

CITY OF ELWOOD WWTP
CSO1 IMPROVEMENTS

SHEET TITLE:

PROJECT TITLE:



CONSULTANT:

2214 PLANTSIDE DRIVE
LOUISVILLE, KY 40299
(502) 493-2717 - Corporate
(317) 324-1276 - Fax

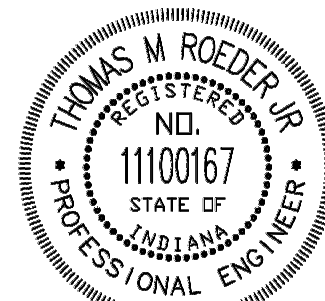


CONSULTANT:

1135 SHELBY STREET
INDIANAPOLIS, IN 46201
(317) 430-4128 - Corporate
(507) 804-6522 - Fax



8606 ALLUSONVILLE RD, SUITE 235
INDIANAPOLIS, IN 46250
E-MAIL: CWHITAKER@WHITAKERENGINEERING.COM



Thomas M. Roedel

CERTIFIED BY:

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OWNER INFORMATION:

CITY OF ELWOOD
UTILITY OFFICE
1505 SOUTH B ST
ELWOOD, IN 46036

SHEET LABEL

E601

CHECKED BY: TMR

DRAWN BY: STAFF

SHEET No.

73

PROJECT No.:

24172

DATE: 09/03/2026

OF:

78

ENLARGED LIFT STATION PLAN - ELECTRICAL

SCALE: 1/4" = 1'-0"



FEEDER SCHEDULE											
COPPER FEEDERS AND COPPER GROUND					ALUMINUM FEEDERS AND COPPER GROUND						
FEEDER	CONDUCTOR AMPLACITY	75c Cu COPPER WIRE	GROUND CONDUCTOR PER CONDUIT COPPER WIRE	MINIMUM CONDUIT SIZE 3 WIRE PLUS GROUND 4 WIRE PLUS GROUND	FEEDER	CONDUCTOR AMPLACITY	75c AL ALUMINUM WIRE	GROUND CONDUCTOR PER CONDUIT COPPER WIRE	MINIMUM CONDUIT SIZE 3 WIRE PLUS GROUND 4 WIRE PLUS GROUND		
1	30A	#12	#12	3/4"	3/4"		-	-	-		
2	30A	#10	#10	3/4"	3/4"		-	-	-		
3	55A	#8	#10	1"	1"		-	-	-		
4	60A	#6	#10	1"	1 1/4"		-	-	-		
5	70A, 80A	#4	#8	1 1/4"	1 1/4"		-	-	-		
6	100A	#3	#8	1 1/4"	1 1/2"		-	-	-		
7	125A	#1	#6	1 1/2"	2"	7	125A	#20	#6	1 1/2"	2"
8	150A	#10	#6	2"	2"	8	150A	#30	#6	2"	2"
9	175A	#20	#6	2"	2"	9	175A	#40	#6	2 1/2"	2 1/2"
10	200A	#30	#6	2"	2 1/2"	10	200A	250 KCMIL	#6	2"	2 1/2"
11	225A	#40	#4	2 1/2"	2 1/2"	11	225A	300 KCMIL	#4	2 1/2"	2 1/2"
12	300A	350 KCMIL	#4	3"	3"	12	300A	500 KCMIL	#4	3"	3"
13	350A	500 KCMIL	#2	3"	3"	13	350A	(2) #40	#2	(2) 2 1/2"	(2) 2 1/2"
14	400A	(2) 30	#3	(2) 2"	(2) 2"	14	400A	(2) 200 KCMIL	#3	(2) 3"	(2) 3 1/2"
15	500A	(2) 250 KCMIL	#2	(2) 3 1/2"	(2) 2 1/2"	15	500A	(2) 350 KCMIL	#2	(2) 2 1/2"	(2) 2 1/2"
16	600A	(2) 350 KCMIL	#1	(2) 3"	(2) 3"	16	600A	(2) 500 KCMIL	#1	(2) 3"	(2) 3"
17	800A	(2) 500 KCMIL	#10	(2) 3"	(2) 4"	17	800A	(3) 400 KCMIL	#10	(3) 2 1/2"	(3) 2 1/2"
18	1000A	(3) 500 KCMIL	#20	(3) 3 1/2"	(3) 3 1/2"	18	1000A	(4) 500 KCMIL	#20	(4) 2 1/2"	(4) 2 1/2"
19	1200A	(3) 600 KCMIL	#30	(3) 4"	(3) 4"	19	1200A	(4) 500 KCMIL	#30	(4) 3"	(4) 3"
20	1600A	(4) 600 KCMIL	250 KCMIL	(4) 4"	(4) 5"	20	1600A	(5) 600 KCMIL	#40	(5) 4"	(5) 4"
21	2000A	(5) 600 KCMIL	250 KCMIL	(5) 4"	(5) 4"	21	2000A	(6) 600 KCMIL	250 KCMIL	(6) 4"	(6) 4"
22	2500A	(6) 600 KCMIL	350 KCMIL	(6) 4"	(6) 4"	22	2500A	(8) 600 KCMIL	350 KCMIL	(8) 4"	(8) 4"
23	3000A	(8) 500 KCMIL	-	(8) 4"	(8) 4"	23	-	-	-	-	-
24						24					

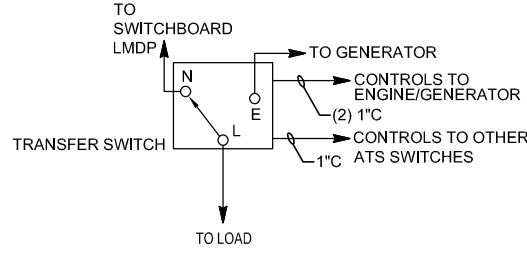
NOTE:
1. WIRING SHALL BE PROVIDED IN ACCORDANCE WITH THE NEC, UNLESS LARGER SIZES ARE SHOWN TO ACCOMMODATE FUTURE LOADS OR VOLTAGE DROP.
2. FEEDERS ARE 4 WIRE UNLESS NOTED OTHERWISE.
3. GROUND CONDUCTORS REQUIRED IN ALL FEEDER CONDUITS.

GENERATOR G-N NOTES

MINIMUM RATED CAPACITY: 510 KW 638 SKVA
BASIS OF DESIGN: MANUF: KOHLER MODEL: 500RE02JB
RATED VOLTAGE: 480/277 V 3-PHASE/ 4 WIRE
ENCLOSURE RATING: SEE SPECIFICATIONS FUEL TYPE: DIESEL
SEE SPECIFICATIONS FOR ADDITIONAL FEATURES

TRANSFER SWITCH ATS-N NOTES

TRANSFER SWITCH TYPE: AUTOMATIC CURRENT RATING: 800 A
RATED VOLTAGE: 480 V 3-PHASE/ 4 WIRE # OF POLES: 4
NEUTRAL CONFIGURATION: SWITCHED INSTANT TRANSFER: Y
MAIN CIRCUIT BREAKER: N GROUND FAULT ON MAIN: Y
SERVICE ENTRANCE RATED: N REMOTE ANNUNCIATION: Y
BY-PASS ISOLATION: Y NEC LOAD BRANCH: 750 KVA: 65
SEE SPECIFICATIONS FOR ADDITIONAL FEATURES
NEMA RATING: 3R

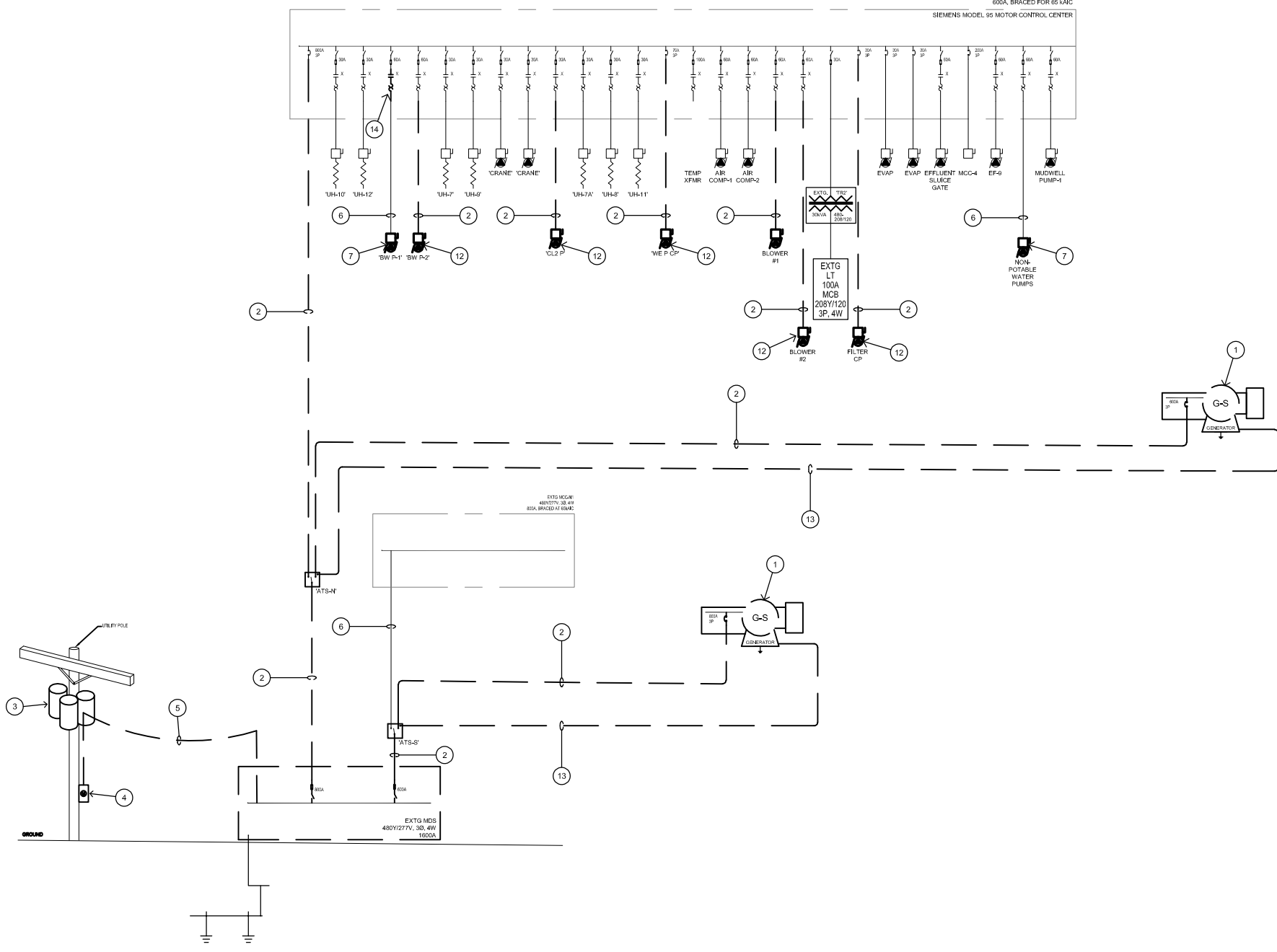
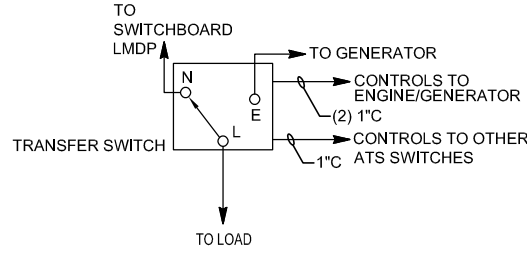


GENERATOR G-S NOTES

MINIMUM RATED CAPACITY: 350 KW 438 SKVA
BASIS OF DESIGN: MANUF: KOHLER MODEL: 350RE02JC
RATED VOLTAGE: 480/277 V 3-PHASE/ 4 WIRE
ENCLOSURE RATING: SEE SPECIFICATIONS FUEL TYPE: DIESEL
SEE SPECIFICATIONS FOR ADDITIONAL FEATURES

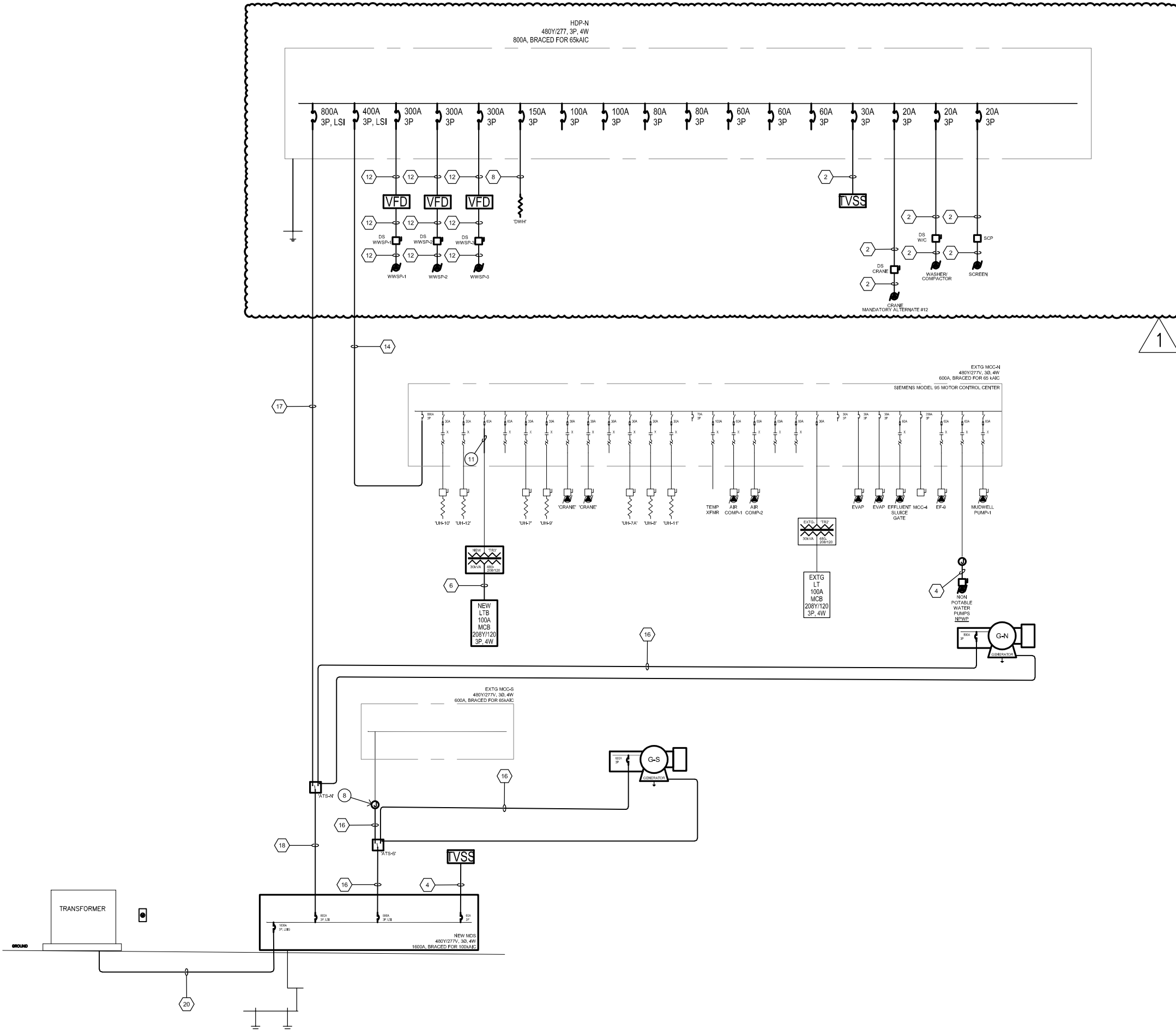
TRANSFER SWITCH ATS-S NOTES

TRANSFER SWITCH TYPE: AUTOMATIC CURRENT RATING: 800 A
RATED VOLTAGE: 480 V 3-PHASE/ 4 WIRE # OF POLES: 4
NEUTRAL CONFIGURATION: SWITCHED INSTANT TRANSFER: Y
MAIN CIRCUIT BREAKER: N GROUND FAULT ON MAIN: Y
SERVICE ENTRANCE RATED: N REMOTE ANNUNCIATION: Y
BY-PASS ISOLATION: Y NEC LOAD BRANCH: 750 KVA: 65
SEE SPECIFICATIONS FOR ADDITIONAL FEATURES
NEMA RATING: 1



EXISTING ONE-LINE DIAGRAM

SCALE: NOT TO SCALE



REVISED ONE-LINE DIAGRAM

SCALE: NOT TO SCALE

GENERAL NOTES

- SEE SHEET E001 FOR SYMBOLS AND ABBREVIATIONS.
- SEE E80X SHEETS FOR ELECTRICAL SCHEDULES.
- SEE E80X SHEETS FOR ELECTRICAL DETAILS.
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SHEET PLAN NOTES

- DEMOLISH EXISTING GENERATOR COMPLETE.
- DEMOLISH EXISTING FEEDER CIRCUIT COMPLETE.
- ELECTRICAL CONTRACTOR SHALL COORDINATE WITH AEP FOR REMOVAL OF OVERHEAD TRANSFORMER BANK.
- ELECTRICAL CONTRACTOR SHALL COORDINATE WITH AEP FOR REMOVAL OF EXISTING UTILITY METER.
- ELECTRICAL CONTRACTOR SHALL COORDINATE WITH AEP FOR REMOVAL OF EXISTING SECONDARY SERVICE DROP.
- EXISTING FEEDER CIRCUIT SHALL REMAIN.
- DEMOLISH EXISTING DISCONNECT SWITCH/MOTOR STARTER. EXISTING FEEDER CIRCUIT SHALL REMAIN.
- PROVIDE JUNCTION BOX OVER PREVIOUS LOCATION OF DEMOLISHED MDS. CONNECT NEW FEEDER CIRCUITS TO EXISTING FEEDERS.
- NEMA 4X SS CABINET SIZED TO HOLD ALL EQUIPMENT, MINIMUM CABINET SIZE IS 60" X 36" X 12".
- 10KVA 480/240/120V STEP DOWN TRANSFORMER IN NEMA 4X SS ENCLOSURE.
- CONNECT EXISTING CONDUCTORS TO LUGS ON FUSE BLOCK.
- DEMOLISH EXISTING DISCONNECT SWITCH/MOTOR STARTER COMPLETE.
- DEMOLISH EXISTING CONTROL CIRCUIT COMPLETE.
- REMOVE EXISTING CONTACTS AND OVERLOADS.

FIELD VERIFY:

EXISTING ELECTRICAL EQUIPMENT WAS OBTAINED FROM SIMILAR BUILDING DRAWINGS AND CURSORY FIELD OBSERVATION. HOWEVER, ACTUAL "AS-BUILT" DRAWINGS WERE NOT AVAILABLE. CERTAIN INFORMATION CONCERNING THE LOCATION OF THE EXISTING ELECTRICAL WORK MUST BE VERIFIED IN THE FIELD TO DETERMINE THE EXACT LOCATIONS, DEPTH, SIZE, ETC. PRIOR TO STARTING CONSTRUCTION. ANY CONFLICT BETWEEN THESE PLANS AND THE ACTUAL CONDITIONS SHALL BE REPORTED IMMEDIATELY TO THE ARCHITECT FOR VERIFICATION AND/OR CORRECTION.

REVISIONS:

1 ADDENDUM #3

09/25/2026

ELECTRICAL RISER

SHEET TITLE:

CITY OF ELWOOD WWTP
CSO1 IMPROVEMENTS

PROJECT TITLE:



CONSULTANT:

2214 PLANTSIDE DRIVE
LOUISVILLE, KY 40299
(502) 493-2717 - Corporate
(317) 324-1276 - Fax

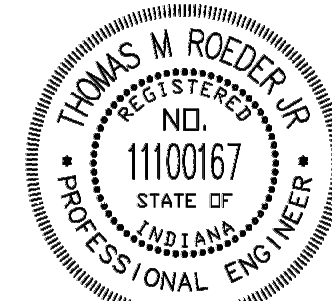


CONSULTANT:

1135 SHELBY STREET
INDIANAPOLIS, IN 46201
(317) 430-4128 - Corporate
(507) 604-6522 - Fax



8606 ALLISONVILLE RD, SUITE 235
INDIANAPOLIS, IN 46250
E-MAIL: CWHITAKER@WHITAKERENGINEERING.COM



CERTIFIED BY:

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ELWOOD, IN 46036

SHEET LABEL

E701

SHEET No.

74

OF:

78

PROJECT No.:

24172

CHECKED BY: TMR

DRAWN BY: STAFF

DATE: 09/03/2026



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REMARKS:REMARKS:

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REVIS
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M

SHEET TITLE:

CONSULTANT:

2214 PLANTSIDE DRIVE
LOUISVILLE, KY 40299
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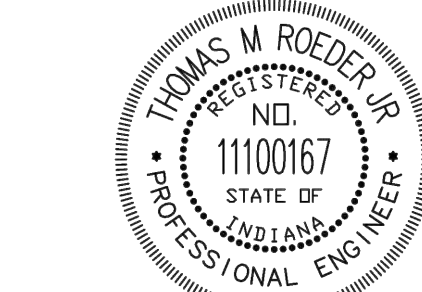


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John M. Adams

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SHEET LABEL E801	SHEET No. 75	OF: 78
	PROJECT No.: 24172	
CHECKED BY: TMR		
DRAWN BY: STAFF	DATE: 09/03/2026	

SECTION 09 96 00 – HIGH-PERFORMANCE COATING SYSTEMS
FOR WASTEWATER TREATMENT PLANTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Work under this section consists of surface preparation, priming, painting, and finishing work necessary to complete Work indicated or reasonably implied on Drawings.
2. Use high performance coating systems specified in this section to finish components, unless otherwise indicated. Without restricting volume or generality, work to be performed under this section may include, but is not limited to:
 - a. Exterior & Interior Steel, New and Existing Non-Immersion
 - b. Exterior Steel, New and Existing, Immersion
 - c. Cast Iron, Ductile Iron, Non-Galvanized, Non-Ferrous, or Steel for Wastewater Liquid and Gas Exposure.
 - d. New & Existing Galvanized Surfaces
 - e. Structural Steel
 - f. Exposed Metal Piping, Supports and Conduits
 - g. New Plastic, FRP, Flexible Conduit, Piping and Ductwork
 - h. Copper, Other Non-Galvanized and Non-Ferrous Surfaces
3. Painting or finishing is not needed for following:
 - a. Surfaces or materials specifically scheduled or shown on Drawings to remain unfinished.
 - b. Items provided with factory finish.
 - c. Equipment nameplates, fire rating labels, and operating parts of equipment
 - d. Materials and products having factory-applied primer shall not be considered factory finished.

B. Related Sections:

1. Section 03 30 00 – Cast-In-Place Concrete
2. Section 05 50 00 – Metal Fabrications
3. Section 26 05 64 – Painting (Electrical)
4. Section 40 05 13 – Plant and Process Piping
5. Section 40 05 31 – Thermoplastic Process Pipe

1.2 REFERENCES

- A. This Section contains references to the governing standards and documents listed below. They are a part of this Section as specified and modified; the current version shall apply unless

otherwise noted. In case of conflict between the requirements of this section and those of the listed documents, the more stringent of the requirements shall prevail.

1. American Concrete Institute, (ACI)
 - a. ACI 301 Specifications for Structural Concrete.
 - b. ACI 308R Guide to Curing Concrete.
 - c. ACI 350 Code Requirements for Environmental Engineering Concrete Structures and Commentary.
 - d. ACI 546.R Concrete Repair Guide.
 - e. ACI 546.3R Guide for the Selection of Materials for the Repair of Concrete
2. American National Standards Institute (ANSI):
 - a. ANSI A13.1 Scheme for the Identification of Piping Systems
 - b. ANSI Z535.1 Safety Color Code
 - c. ANSI/ASC 29.4 Abrasive Blasting Operations – Ventilation and Safe Practice
3. ASTM International, (ASTM)
 - a. ASTM C 307 Standard Test Method for Tensile Strength of Chemical-Resistant Mortar, Grouts, and Monolithic Surfacing.
 - b. ASTM C 413 Standard Test Method for Absorption of Chemical-Resistant Mortars, Grouts, Monolithic Surfacing, and Polymer Concretes.
 - c. ASTM C 531 Standard Test Method for Linear Shrinkage and Coefficient of Thermal Expansion of Chemical-Resistant Mortars, Grouts, Monolithic Surfacing, and Polymer Concretes.
 - d. ASTM C 579 Standard Test Methods for Compressive Strength of Chemical Resistant Mortars, Grouts, Monolithic Surfacing, and Polymer Concretes.
 - e. ASTM C 580 Standard Test Method for Flexural Strength and Modulus of Elasticity of Chemical-Resistant Mortars, Grouts, Monolithic Surfacing, and Polymer Concretes.
 - f. ASTM D 16 Standard Terminology for Paint, Related Coatings, Materials, and Applications.
 - g. ASTM D 635 Standard Test Method for Rate of Burning and/or Extent and Time of Burning of Plastics in a Horizontal Position.
 - h. ASTM D 2047 Standard Test Method for Static Coefficient of Friction of Polish-Coated Flooring Surfaces as Measured by the James Machine.
 - i. ASTM D 2240 Standard Test Method for Rubber Property – Durometer Hardness.
 - j. ASTM D 4060 Standard Test Method for Abrasion Resistance of Organic Linings by the Taber Abraser.
 - k. ASTM D 4285 Standard Test Method for Indicating Water or Oil in Compressed Air.

- l. ASTM D 4263 Standard Test Method for Indicating Moisture in Concrete by the Plastic Sheet Method.
 - m. ASTM D 4414 Standard Practice for Measurement of Wet Film Thickness by Notch Gages.
 - n. ASTM D 4541 Standard Method for Pull-Off Strength of Coatings using Portable Adhesion Testers.
 - o. ASTM D 6386 Standard Practice for Preparation of Galvanized Iron & Steel
 - p. ASTM D 6944 Standard Test Method for Measuring Humidity with a Psychrometer.
 - q. ASTM F 1869 Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride
4. American Water Works Association
 - a. AWWA D102-17 Coating Steel Water Storage Tanks
5. Code of Federal Regulations (CFR)
 - a. 1915.35 Standards 29 CFR – Painting
6. Environmental Standards:
 - a. U.S. Green Building Council (USGBC) LEED Version 2009
 - b. Green Seal: GS-11, GC-03
7. International Concrete Repair Institute (ICRI)
 - a. 110.2-2020 Guide Specification for Epoxy Injection
 - b. 120.1-09 Guidelines & Recommendations for Safety in the Concrete Repair Industry
 - c. 130.1R-2009 Guides for Methods of Measurement & Contract Types for Concrete Repair Work
 - d. 210.1-1998 Guide for Verifying Field Performance of Epoxy Injection of Concrete Cracks
 - e. 210.3R-13 Guide for Using In-Situ Tensile Pulloff Tests to Evaluate Bond of Concrete Surface Materials
 - f. 210.4-09 Guide for Nondestructive Evaluation Methods for Condition Assessment, Repair, & Performance Monitoring of Concrete Structures
 - g. 310.1R-2008 Guide for Surface Preparation for the Repair of Deteriorated Concrete Resulting from Reinforcing Steel Corrosion
 - h. 310.2R-2013 Selecting & Specifying Surface Preparation for Sealers, Coatings, Polymer Overlays, & Concrete Repair
 - i. 310.3R-14 Guide for the Preparation of Concrete Surfaces for Repair Using Hydrodemolition Methods
 - j. 320.1R-1996 Guide for Selecting Application Methods for the Repair of Concrete Surfaces

- | | | |
|----|-------------|--|
| k. | 320.2R-2009 | Guide for Selecting & Specifying Materials for Repair of Concrete Surfaces |
| l. | 320.3R-2012 | Guideline for Inorganic Repair Material Data Sheet Protocol |
| m. | 320.5R-14 | Pictorial Atlas of Concrete Repair Equipment |
| n. | 330.1-2006 | Guide for Selection of Strengthening Systems for Concrete Structures |
| o. | 340.1-2006 | Guide for the Selection of Grouts to Control Leakage in Concrete Structures |
| p. | 410.1-2008 | Guide for the Evaluation of Masonry Façade Structures |
| q. | 510.1-2013 | Guide for Electrochemical Techniques to Mitigate the Corrosion of Steel Reinforced Concrete Structures |
| r. | 710.2-2014 | Guide for Horizontal Waterproofing of Traffic Surfaces |
8. NACE International
- | | | |
|----|-------------|---|
| a. | NACE 6D-173 | A Manual for Painter Safety |
| b. | NACE 6G-164 | Surface Preparation Abrasives for Industrial Maintenance Painting |
| c. | NACE TPC2 | Coating and Lining for Immersion Service: Chapter 1 Safety, Surface Preparation, Chapter 3 Curing, and Chapter 2 Inspection |
| d. | NACE 6F-163 | Surface Preparation of Steel of Concrete Tank Interiors |
| e. | NACE RP0892 | Standard Recommended Practice, Lining over Concrete in Immersion Service. |
| f. | NACE RP0288 | Standard Recommended Practice, Inspection of Linings on Steel and Concrete. |
| g. | NACE SP0188 | Standard Practice for Discontinuity (Holiday) Testing of Protective Linings |
9. National Association of Pipe Fabricators (NAPF)
- | | | |
|----|-------------|------------------------------|
| a. | NAPF-500-03 | Surface Preparation Standard |
|----|-------------|------------------------------|
10. National Fire Protection Association
- | | | |
|----|----------|------------------|
| a. | NFPA 101 | Life Safety Code |
|----|----------|------------------|
11. NSF International
- | | | |
|----|--------------|--|
| a. | NSF/ANSI/CAN | Standard 61 Drinking Water System Components |
|----|--------------|--|
12. SSPC: The Society for Protective Coatings
- | | | |
|----|-----------|----------------------------|
| a. | SSPC-SP 1 | Solvent Cleaning |
| b. | SSPC-SP 2 | Hand Tool Cleaning |
| c. | SSPC-SP 3 | Power Tool Cleaning |
| d. | SSPC-SP 5 | White Metal Blast Cleaning |
| e. | SSPC-SP 6 | Commercial Blast Cleaning |

- f. SSPC-SP 7 Brush-off Blast Cleaning
- g. SSPC-SP 10 Near White Metal Blast Cleaning
- h. SSPC-SP 11 Power Tool Cleaning to Bare Metal
- i. SSPC-SP 13 Surface Preparation of Concrete
- j. SSPC-SP 16 Brush-off Blast Cleaning of Non-Ferrous Metals
- k. SSPC-SP WJ-4 Water Jet Cleaning of Metals
- l. SSPC-PA 1 Painting Application Specification
- m. SSPC-PA 2 Measurement of Dry Coating with Magnetic Gauges
- n. SSPC-PA 3 A Guide for Safety in Paint Application
- o. SSPC-Guide 12 Guide for Illumination of Industrial Painting Projects

13. Underwriters Laboratory (UL):

- a. UL 263 Standard for Fire Tests of Building Construction and Materials

14. Unless otherwise specified, references to documents shall mean the documents in effect at the time of receipt of Bids. If referenced documents have been discontinued by the issuing organization, references to those documents shall mean the replacement documents, the last version of the document before it was discontinued.

1.3 DEFINITIONS

- A. Terms Paint or Painting shall in a general sense have reference to sealers, primers, oil, alkyd, latex, polyurethane, epoxy, and enamel type coatings and application of these materials.
- B. Dry Film Thickness (DFT): Thickness, measured in mils, of a coat of paint in cured state.
- C. Conform to ASTM D 16 for interpretation of terms used in this section.

1.4 SUBMITTALS

A. Product Data:

- 1. Submit manufacturer's literature describing products to be provided, giving manufacturer's name, product name, and product line number for each material.
- 2. Submit technical data sheets for each coating, giving descriptive data, curing times, mixing, thinning, and application requirements.
- 3. Provide material analysis, including vehicle type and percentage by weight and by volume of vehicle, resin and pigment.
- 4. Submit manufacturer's Safety Data Sheets (SDS) and other safety requirements.

B. Shop Drawings:

- 1. Submit a complete list of products proposed for use, including identifying product names and catalog numbers.
- 2. Arrange in same format as Schedule of Paint Finishes below.
- 3. Include applicable manufacturer's data and recommendations.

C. Samples:

1. Selection Samples:
 - a. Submit color charts displaying manufacturer's full range of standard colors for initial selection by Engineer.
2. Verification Samples:
 - a. Submit 3 samples of each coating and color selected, showing bare, prepared surface and each successive coat.
 - b. Samples shall be submitted on hardboard or metal as appropriate to coating system. Label samples on back, identifying manufacturer, product name, and color number.
 - c. Sample Size: Not less than 3" x 6"

D. Quality Assurance Submittals:

1. Test Reports:
 - a. Provide certified test reports, prepared by an independent testing laboratory, confirming compliance with specified performance criteria.
2. Certificates:
 - a. Coatings manufacturer shall certify that coating materials utilized are "non-lead" (less than 0.06% lead by weight in dried film) as defined in Part 1303 of Consumer Product Safety Act.
 - b. Provide certification that specialized equipment as may be required by manufacturer for proper application of coating materials shall be utilized for work of this Section.
 - c. Provide manufacturer's certification that products to be used comply with specified requirements and are suitable for intended application.
 - d. Submit listing of not less than 5 of applicator's most recent applications representing similar scope and complexity to Project requirements. List shall include information as follows:
 - 1) Project name and address
 - 2) Name of owner
 - 3) Name of contractor
 - 4) Name of engineer
 - 5) Date of completion
3. Manufacturer's Instructions:
 - a. Submit manufacturer's installation procedures which shall be basis for accepting or rejecting actual installation procedures.

1.5 QUALITY ASSURANCE

A. Qualifications:

1. Provide products from a company specializing in manufacture of high performance coatings with a minimum of 10 years' experience.
2. Applicator shall be trained in application techniques and procedures of coating materials and shall demonstrate a minimum of 2 years successful experience in such application.

- a. Maintain, throughout duration of application, a crew of painters who are fully qualified to satisfy specified qualifications.
3. Single Source Responsibility:
 - a. Materials shall be products of a single manufacturer or items standard with manufacturer of specified coating materials.
 - b. Provide secondary materials which are produced or are specifically recommended by coating system manufacturer to ensure compatibility of system.

B. Regulatory Requirements:

1. Conform to applicable codes and ordinances for flame, fuel, smoke, and volatile organic compound (VOC) ratings requirements for finishes at time of application.

C. Pre-Installation Meetings:

1. Schedule a conference and inspection to be held on-site before field application of coating systems begins.
2. Conference shall be attended by Contractor, Owner's representative, Engineer, coating applicators, and a representative of coating material manufacturer.
3. Topics to be discussed at meeting shall include:
 - a. A review of Contract Documents and accepted shop drawings shall be made and deviations or differences shall be resolved.
 - b. Review items such as environmental conditions, surface conditions, surface preparation, application procedures, and protection following application.
 - c. Establish which areas on-site will be available for use as storage areas and working area.
4. Pre-construction conference and inspection shall serve to clarify Contract Documents, application requirements and what work should be completed before coating application can begin.
5. Prepare and submit, to parties in attendance, a written report of pre-installation conference. Report shall be submitted with 3 days following conference.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Packing, Shipping, Handling, and Unloading:

1. Deliver products in manufacturer's original unopened containers. Each container shall have manufacturer's label, intact and legible. Containers shall fully identify brand, type, grade, class, and other qualifying information used to describe contents.
2. Include on label for each container:
 - a. Manufacturer's name
 - b. Type of paint
 - c. Manufacturer's stock number
 - d. Color name and number
 - e. Instructions for thinning, where applicable

B. Storage and Protection:

1. Store materials in a protected area, away from construction activities. Restrict storage area to paint materials and related equipment.
2. Maintain temperature in area of storage between 40°F (4°C) and 110°F (43°C).
3. Comply with health and fire safety regulations
4. Remove damaged materials from Site.

1.7 PROJECT CONDITIONS

A. Environmental Requirements:

1. Apply coating materials under conditions as follows:
 - a. Air temperature shall not be below 35°F (2°C) or above 110°F (43°C).
 - b. Refer to specific product information sheets for minimum surface temperature requirements. Surface temperatures shall be at least 5°F (15°C) above dew point and in a rising mode.
 - c. Relative humidity shall be no higher than 85%.
 - d. For exterior spray application, wind velocity shall be less than 15 mph (25 k/h).
 - e. Atmosphere shall be relatively free of airborne dust.

1.8 SEQUENCING

A. Coordination:

1. Perform work in proper sequence with work of other trades to avoid damage to finished work.
2. Where coatings are scheduled to be applied over shop applied coatings, coordinate work of such shop applied products to ensure compatibility with field applied coating systems.

1.9 SAFETY

A. The Contractor's work forces should comply with the provisions outlined in the following documents:

1. SSPC-PA 3 A Guide to Safety in Paint Application
2. NACE A Manual for Painter Safety

B. The Contractor shall provide personnel with all safety equipment necessary to protect them during any phase of the work. This shall include, but not be limited to safety glasses, goggles, earplugs, hard hats, steel toed work shoes, appropriate personal protective clothing, gloves, and plant approved escape respirators (where required).

C. No work shall be performed until the appropriate Work Requests and lock-outs are approved by the Engineer. The Work Request system provides a mechanism to advise plant staff of a contractor's work activities. The Lockout system is a safety procedure to prevent unintended equipment activation.

D. Keep any flammable materials such as cleaning solvents, thinners, or resurfacing materials away from open flames, sparks or temperatures higher than 150°F. Drums containing

flammable materials will be grounded. No solvent in any quantity shall be allowed inside containment enclosures or permitted confined spaces at any time during resurfacing work.

- E. Power tools are to be in good working order to avoid open sparking. No spark producing tools shall be utilized in restricted areas as indicated herein.
- F. The Contractor shall fireproof all work areas by maintaining a clean work area and having Underwriter's Laboratories approved fire extinguishers on-hand. The Contractor shall furnish these fire extinguishers
- G. Workers doing abrasive blasting operations shall wear a fresh air supplied protective helmet and hood and personal protective clothing acceptable to industry standards and all government regulations.
- H. Dispose of rags used for wiping up resurfacing materials, solvents, and thinners by drenching them with water and placing in a metal container with a tight fitting metal cover. Complete this disposal process at the end of each day. Final disposal of these materials is the Contractor's responsibility.
- I. Matches, smoking, flames, or sparks resulting from any source including welding, must be remote from the work area during coating work. Smoking is permitted only in designated areas of the plant.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Manufacturer

- 1. All materials specified herein shall be manufactured by:

- a. Tnemec Company, Incorporated
[800.890.7580](tel:800.890.7580), www.tnemec.com
- b. Sherwin-Williams, Co.
800-474-3794, <https://www.sherwin-williams.com/>
- c. Or Engineer Approved Equal.

- B. The products are specified to establish standards of quality and are approved for use on this project in the applications identified for each production and application conditions.

C. Product Distribution and Technical Representation:

- 1. Redox Coating Consultants, LLC
[614.850.8160](tel:614.850.8160), www.redoxcoatings.com, redox@redoxcoatings.com
- 2. Sherwin Williams Co.
800-474-3794, <https://www.sherwin-williams.com>, Hank.Meinking@sherwin.com

- D. Materials specified herein shall not preclude consideration of equivalent or superior materials. Suggested equivalent materials or other substitutions shall be submitted to Engineer for consideration in compliance with substitution procedures included in this Project Manual and shall include the following:
1. Evidence of satisfactory past performance in similar environment
 2. Complete side-by-side coating system comparisons which provide, at minimum:
 - a. Direct correlation of the submitted products to the specified products, organized and outlined to coincide with, and reference directly to, the Coating Schedule as listed in this specification.
 - b. All required performance criteria testing data referencing the specified testing protocols for each product. Complete test results must be submitted. "Pass/Fail" results shall not be accepted.
 3. Substitutions will not be considered that change the number of coats or do not meet specified dry film thicknesses.
 4. After second submittal, Engineer/Owner or Owner's Agent hourly rates will be charged to review further submittals.

2.2 COATING SYSTEMS, GENERAL

- A. Use only the specified basis-of-design products or Engineer preapproved substitutions. Complete results for those product performance criteria listed in this subpart must accompany any substitution submittal. Incomplete substitution submittals will not be reviewed.
- B. The number of coats specified is the minimum number required. If additional coats are required to achieve the specified dry film thickness or to provide complete coverage, provide additional coats at no additional cost to the owner.
- C. Material Compatibility: Provide block fillers, primers, and intermediate and final coat materials that are compatible with one another and with the substrates indicated under the conditions of service and applications as recommended by the manufacturer, based on testing and field experience.
- D. Material Quality: Provide the manufacturer's best quality paint material of the various coating types specified that are factory-formulated and recommended by manufacturer for application indicated.
- E. Colors: As selected by Owner from manufacturer's full range, and as scheduled in Part 3

2.3 ACCESSORIES

- A. Coating Application Accessories
1. Provide application accessories as indicated in coating manufacturer's application instructions, including but not limited to cleaning agents, etching agents, cleaning cloths, sanding materials, and clean-up materials.
 2. Material not specifically identified, when required for proper application, shall be of a quality not less than specified products.

B. Abrasive Blast Media

1. If dry or wet abrasive blast cleaning is the selected method of surface preparation, provide slag grit of a sieve size, gradation, and quality necessary to produce the degree of cleanliness and surface profile required herein.

2.4 SHOP FINISHING

A. Surface Preparation:

1. Clean surfaces as follows immediately prior to priming.
 - a. Immersion: SSPC-SP10/NACE No. 2 Near White Metal Blast Cleaning
 - 1) Provide a minimum surface profile of 1.5 mils anchor pattern
 - b. Immersion/Fumes: Hydrogen Sulfide Environments (Primary and Secondary Clarifier Mechanisms): SSPC SP10/NACE No. 2 Near White Metal Blast Cleaning
 - 1) Provide a minimum surface profile of 3.0 mil anchor profile.
 - c. Non-Immersion & Exterior Exposed: SSPC-SP6/NACE No. 3 Commercial Blast Cleaning. Surfaces to be coated shall be clean, dry, smooth and free from dust and foreign matter that will adversely affect adhesion or appearance.
 - 1) Provide a minimum surface profile of 1.5 mils anchor pattern
2. Prior to application of primer, steel surfaces shall be prepared as stated above to receive coating system or in compliance with manufacturer's recommendations and specifications of Steel Structures Painting Council as indicated in Schedule of Coating Systems below.

B. Shop Applied Coatings:

1. Steel members shall be provided with one coat of primer as indicated in Schedule of Coating Systems below. Application of the primer coat shall follow immediately after surface preparation and cleaning and within an eight-hour working day. Cleaned areas not receiving first coat within an eight-hour period shall be re-cleaned prior to application of first coat.
 - a. Immersion/Fumes: Hydrogen Sulfide Environments (Headworks, Grit Chambers, Wet Wells, Digesters, Lift Stations, Primary and Secondary Clarifier Mechanisms): Use
 - b. Series N69F H.B. Epoxoline II applied at 4.0 to 6.0 mils
 - c. Non-Immersion & Exterior Exposed: Series 1 Omnithane, applied at 3.0 to 3.5 mils DFT
2. Apply materials at film thicknesses specified by methods recommended by manufacturer in compliance with SSPC PA-1.
3. Allow each coat of paint to dry thoroughly before applying succeeding coats.
4. Make finish topcoats smooth, uniform in color, and free of laps, runs, dry spray, over-spray, and skipped or missed areas.
5. Environmental conditions shall comply with coating manufacturer's printed instructions.

2.5 SOURCE QUALITY CONTROL

A. Testing Laboratory Services:

1. Documents:
 - a. Review Contract Documents and applicable sections of referenced standards.
2. Shop Painting Inspection:
 - a. Verify cleaning operations to surfaces are to condition specified.
 - b. Verify conformance of paint to specification.
 - c. Check for thickness of each coating, final thickness and holidays.
 - d. Check touch-up for final finish.
3. Reports:
 - a. Submit written progress reports describing tests and inspections made and showing action taken to correct non-conforming work. Report uncorrected deviations from Contract Documents.

PART 3 - EXECUTION

3.1 ACCEPTABLE INSTALLERS

- A. Insert a listing of pre-qualified painters if applicable
- B. Employ only trades-people who have at least five (5) years of experience performing specialized coating surfacing work of similar size and complexity as the work specified in this Section.

3.2 EXAMINATION

- A. Site Verification of Conditions:
 1. Examine areas and conditions under which application of coating systems shall be performed for conditions that will adversely affect execution, permanence, or quality of coating system application.
 2. Correct conditions detrimental to timely and proper execution of Work.
 3. Do not proceed until unsatisfactory conditions have been corrected.
 4. Commencement of installation constitutes acceptance of conditions and responsibility for satisfactory performance.

3.3 GENERAL SURFACE PREPARATION

- A. Protection:
 1. Take precautionary measures to prevent fire hazards and spontaneous combustion. Remove empty containers from Site.
 2. Place cotton waste, cloths and hazardous materials in containers, and remove from Site daily.
 3. Provide drop cloths, shields, and other protective equipment.
 4. Protect elements surrounding work of this section from damage or disfiguration.

5. As Work proceeds, promptly remove spilled, splashed, or splattered materials from surfaces.
6. During application of coating materials, post Wet Paint signs.
7. During application of solvent-based materials, post No Smoking signs.

B. Surface Preparation:

1. General Requirements:
 - a. Prior to application of primer, surfaces shall be prepared to receive specified coating system in compliance with manufacturer's recommendations and specifications of SSPC as indicated in Schedule below.
 - b. Clean surfaces of residual deposits of grease, scale, rust, oil, dirt, and other foreign matter, immediately prior to priming. Surfaces to be coated shall be clean, dry, smooth and free from dust and foreign matter that will adversely affect adhesion or appearance.

3.4 SURFACE PREPARATION FOR COATING SYSTEMS

A. Concrete Surfaces

1. Concrete surfaces to receive protective coating shall be cast with a Smooth Form Finish in accordance with ACI 301. Surfaces shall not be rubbed, sacked, troweled or otherwise finished in any manner that will obscure or cover the parent concrete surface with materials other than materials as specified in this Section.
2. Allow cast-in-place concrete to cure for a minimum of 28 days at 75°F (24°C) and with adequate air movement before installing the corrosion protection lining system.
3. All surface washing, abrasive blasting, water-jetting, grinding, patching, filling and preparation shall be completed by the Applicator in accordance with the Protective Coating Manufacturer's recommendations.
4. Substrate: Concrete surfaces to be coated shall be free of curing compounds and form release agents, laitance and foreign particles that may inhibit bonding. Prior to start of protective coating systems application, pre-clean as required, and inspect the substrate in accordance with SSPC-SP13/NACE No. 6, Severe Service. Surface preparation procedures shall be in accordance with NACE SP0892, SSPC-SP13/NACE No. 6 and ICRI Guideline No. 310.2. Surface preparation shall expose aggregate and obtain a uniform surface texture resembling the minimum recommended concrete surface ICRI-CSP profile.
5. Level or grind concrete substrates to produce a uniform and smooth surface, including removal of all sharp edges, ridges, form fins, and other concrete protrusions.
6. Surface preparation requirement is to expose a sound, uniform surface texture confirming to the minimum recommended ICRI-CSP. The appropriate cementitious repair mortar or epoxy cementitious resurfacer material shall be applied to the entire, prepared surface to level surface suitable for coating.

- B. New Concrete Application: All laitance and contaminants must be removed from the surface of the concrete prior to preparation in accordance with NACE SP0892 and SSPC-SP13/NACE No. 6. All voids, bugholes, and other surface depressions shall be filled with the specified epoxy-modified resurfacer, re-establishing plan finished grades and concrete

- planes. The thin overlay shall be applied as a continuous parge coat at a minimum 1/16 inch (1.6 mm) thickness to the entire concrete surface.
- C. Existing Concrete Application: Existing concrete structures to receive protective coating system must be capable of withstanding imposed loads. All oil, grease, waste and chemical contaminants must be removed from the surface of the concrete prior to preparation in accordance with NACE SP0892 and SSPC-SP13/NACE No. 6. Concrete surfaces must be sound and capable of supporting the Protective Lining system as determined by the engineer.
- D. Ferrous Metal Surfaces:
1. Surfaces shall be free of residual deposits of grease, rust, scale, dirt, dust, and oil.
 2. Immersion Service:
 - a. For shop primed surfaces in spot clean, removing loose primer and all rust per SSPC-SP10/NACE No. 2 Near White Blast Cleaning
 - b. Provide a minimum surface profile of 1.5 mil minimum anchor profile.
 3. Immersion/Fumes: Hydrogen Sulfide Environments (Headworks, Grit Chambers, Wet Wells, Digesters, Lift Stations, Primary and Secondary Clarifier Mechanisms)
 - a. SSPC SP5/NACE No. 1 White Metal Blast Cleaning
 - b. Provide a minimum surface profile of 3.0 mil minimum anchor profile.
 - c. This preparation will be followed by vacuum cleaning to remove all dust, dirt or friable substances leaving clean, dust free surfaces for priming.
 4. Non-Immersion or Exterior Exposed:
 - a. SSPC-SP6/NACE No. 3 Commercial Blast Cleaning. If Sandblasting is deemed impractical clean surfaces per SSPC-SP11 Power Tool Cleaning to Bare Metal. Feather edges to make touch-up patches inconspicuous. Field welds and touch-ups shall be prepared to conform to original surface preparation standards as indicated in Schedule of Coating Systems below.
 - b. Shop applied prime coatings which are damaged during transportation, construction or installation shall be thoroughly cleaned and touched up in field. Use repair procedures which insure complete protection of adjacent primer. Repair methods and equipment may include wire brushing, hand or power tool cleaning or dry air blast cleaning. In order to prevent injury to surrounding painted areas, blast cleaning may necessitate use of lower air pressure, small nozzle and abrasive particle sizes, short blast nozzle distance from surface, shielding and masking. If damage is too extensive to touch up, item shall be re-cleaned and coated or painted.
 - c. For surfaces not shop primed, surfaces shall be cleaned in compliance with specifications of Steel Structures Painting Council as indicated in Schedule of Coating Systems below.
 5. Cast & Ductile Iron & Mill Coated Ductile Iron
 - a. Exterior surfaces, immersion or non-immersion
 - 1) All oils, small deposits of asphalt paint and grease shall be removed by solvent cleaning per NAPF-500-03-01. After the entire surface is struck by the blast media, tightly adherent annealing oxide, mold coating and rust staining may remain on the surface provide they cannot be removed by lifting with a dull putty knife. Refer to NAPF-500-03-04 for preparing ductile iron pipe and NAPF-500-03-05 for fittings.

6. Brush-Off Blast Cleaning:
 - a. Remove all loose annealing oxides, loose rust, dirt, and other foreign matter by compressed air nozzle abrasive blast cleaning using a fine grade abrasive. Any dust or other contaminants remaining after blasting shall be removed with dry, oil free compressed air or by vacuum cleaning. Recheck surface profile prior to painting. A profile depth at least 1.5 mils is required.
 7. Hand or Power Tool Cleaning:
 - a. Remove all loose annealing oxides, loose rust, dirt, and other foreign matter with the use of hand or power tools. Do not use cleaning tools that burnish or smooth the natural roughness (profile) of the cast surface. Any dust or other contaminants remaining after hand or power tool cleaning shall be removed with dry, oil free compressed air or by vacuum cleaning.
 8. Protection from Moisture:
 - a. The cleaned cast iron surfaces shall be protected from condition of high humidity, rainfall, and surface moisture. All surfaces shall be clean, dry and at least 5 degrees above the dew point during application of protective coatings.
- E. Galvanized Steel & Aluminum Surfaces:
1. Immersion, Non-chemical Exposure:
 - a. Contact Tnemec Technical Services for recommendations.
 2. Non-Immersion:
 - a. Non-Passivated:
 - 1) Preferred Method: Remove all soluble and insoluble contaminants. Sweep (Abrasive) Blast per ASTM D 6386 to achieve a uniform anchor profile (1.0–2.0 mils).
 - 2) Chemical Treatment Method: Remove all soluble and insoluble contaminants and corrosion. Remove any storage stains per ASTM D 6386. Chemically treat in accordance with manufacturer's instructions. Acceptable products are: Henkel Galvaprep 5 or Great Lakes Laboratories Clean & Etch. Ensure that all surfaces have been effectively and uniformly treated.
 - b. Passivated – Remove all soluble and insoluble contaminants. Sweep (Abrasive) Blast per ASTM D 6386 to achieve a uniform anchor profile (1.0–2.0 mils).
 - c. Remove any rust per SSPC-SP2 Hand- or SSPC-SP3 Power Tool Cleaning
- F. Lightweight Metals:
1. Prepare surfaces in compliance with SSPC SP2 Hand- or SSPC-SP3 Power Tool Cleaning.
- G. Copper Surfaces:
1. Clean and etch surfaces by pressurized steam, pressurized water, or solvent washing with Clean N'Etch by Great Lakes Laboratories, Inc.
- H. Stainless Steel Surfaces:

1. Immersion & Non-Immersion:
 - a. Provide uniform scarification
- I. Polyvinyl Chloride (PVC) Pipe:
 1. Remove ink markings by wiping down with clean-lint-free cloths saturated denatured alcohol. Sand surface with 36 grit sandpaper and wipe out off dust residue.
- J. Gypsum Drywall
 1. Sand joint compound with fine-grit, open-coated sandpaper to provide a smooth, flat surface. Avoid heavy sanding of adjacent wallboard surfaces. Putty, patching pencils, caulking, or masking tape should not be applied to drywall surfaces to be painted.
 2. Lightly abrade tape joints after priming to remove raised paper nap, taking care not to sand through prime coat.
 3. Remove dust by wiping with clean rags.
- K. Wood
 1. Clean and dry. Remove surface deposits, sap or pitch by scraping and wiping clean with rags dampened with mineral spirits or VM&P Naphtha. Seal knots and pitch pockets with equal parts shellac and shellac thinner (denatured alcohol) before priming. Sand rough spots with the grain, going from medium grit to fine grit sandpaper. After priming, fill cracks and holes with compatible compound. When filler is hard, sand flush with the surface using fine grit sandpaper.

3.5 APPLICATION

A. General Requirements:

1. Concrete Surfaces:
 - a. Application in direct sunlight and/or with rising surface temperatures is not allowed, as this may result in blistering of the materials due to expansion of entrapped air or moisture in the concrete. In such cases, it will be necessary to postpone the application until later in the day when the temperature of the substrate is falling. Concrete surfaces that have been in direct sunlight should be shaded for at least 24 hours prior to application. Consult the Manufacturer for application schedule guidelines specific to temperature conditions and possible sealer application recommendations to reduce outgassing.
2. All Surfaces:
 - a. Protective coating systems shall be installed when ambient air and surface temperature is above 50°F. The substrate temperature shall be at least 5°F (3°C) above the dew point. Condition the material between 70-80°F (21-27°C) for 24 hours prior to use. Application when temperatures outside of this range will require written instruction from the Manufacturer and approval of the Engineer.
 - b. Apply coating systems in compliance with manufacturer's instructions and using application method best suited for obtaining full, uniform coverage of surfaces to coated.

- c. Apply primer, intermediate, and finish coats to comply with wet and dry film thicknesses and spreading rates for each type of material as recommended by manufacturer.
 - 1) Application rates in excess of those recommended and fewer numbers of coats than specified shall not be accepted.
 - d. Number of coats specified shall be minimum number acceptable. Apply additional coats as needed to provide a smooth, even application.
 - 1) Closely adhere to re-coat times recommended by manufacturer. Allow each coat to dry thoroughly before applying next coat. Provide adequate ventilation for tank interior to carry off solvents during drying phase.
 - e. Employ only application equipment that is clean, properly adjusted, and in good working order, and of type recommended by coating manufacturer.
3. Metal Surfaces:
- a. After surface preparation, interior weld seams shall be brush applied.
 - b. Make edges of paint adjoining other materials or colors sharp and clean, without overlapping.
 - c. Finish tops, bottoms and edges of doors same as faces of doors.
 - d. Piping and Conduit Exposed to View:
 - 1) Finish in compliance with requirements for unprimed ferrous metal items.
 - a) Use colors specified in Section 3.12
 - 2) Identification markings will be provided by others.
 - e. Access Panels, Electrical Panels, and Cover Plates:
 - 1) Finish in compliance with requirements for shop-primed ferrous metal items, including doors, door backs and sight-exposed cabinet surfaces, color matching adjacent surfaces unless otherwise indicated; do not allow coatings on identification plates, tags, or markings.

3.6 REPAIR/RESTORATION

- A. At completion of Work, touch-up and restore finishes where damaged.
- B. Defects in Finished Surfaces:
 - 1. When stain, dirt, or undercoats show through final coat, correct defects and cover with additional coats until coating is of uniform finish, color, appearance and coverage.
 - 2. Correct defects visible from a distance of 5 feet. Runs shall not be permitted.
- C. Touch-up of minor damage shall be acceptable where result is not visibly different from surrounding surfaces. Where result is visibly different, in color, sheen, or texture, recoat entire surface.
- D. Hoisting, Scaffolding, Staging, and Planking:
 - 1. Provide, set-up, and maintain all required hoists, scaffolds, and staging and planking, and perform all access related hoisting work required to complete the work of this section as indicated and specified.
 - 2. Scaffolds shall have solid backs and floors to prevent dropping materials from there to the floors or ground below.

E. Environmental Requirements:

1. Comply with the Manufacturer's recommendations as to environmental conditions under which resurfacing system materials can be applied.
2. Do not apply resurfacing system materials when dust is in work site.
3. The Contractor shall provide all temporary lighting during the work.

F. Protection:

1. Cover or otherwise protect finish work or other surfaces not being resurfaced.
2. Erect and maintain protective tarps, enclosures and/or maskings to contain debris (such as dust or airborne particles resulting from surface preparation) generated during any and all work activities. This includes, but is not limited to, the use of dust/debris collection apparatus as required.

G. Initial Inspection of Surfaces to be Coated:

1. It is the responsibility of the Contractor to inspect and report unacceptable concrete substrate surface conditions to the Engineer prior to the commencement of surface preparation activities. Unacceptable surface conditions are defined as the presence of cracked surfaces or concrete deteriorated to a depth of greater than 1" or otherwise unable to withstand surface preparation as specified herein.

H. Thinners and Solvents:

1. The Contractor shall use only solvents and thinners as recommended by the Manufacturer.

3.7 FIELD QUALITY CONTROL

A. Testing Laboratory Services:

1. Documents:
 - a. Review Contract Documents and applicable sections of referenced standards.
2. Field Painting Inspection:
 - a. Verify cleaning operations to surfaces are to condition specified.
 - b. Verify conformance of paint to specification.
 - c. Check for thickness of each coating, final thickness and holidays.
 - d. Check touch-up for final finish.
3. Reports:
 - a. Submit written progress reports describing tests and inspections made and showing action taken to correct non-conforming work. Report uncorrected deviations from Contract Documents.
4. Inspection And Protection:
 - a. An inspection of all containment lining areas will be conducted by the Engineer before the areas are covered as specified below. This inspection will determine only what areas if any require repair or other corrective measures. Passage of this inspection will not constitute acceptance of the work.

- b. Provide non-staining protective construction paper as approved over the entire surface area, with joints taped, and boards or planks where subjected to especially heavy traffic or hazards.

B. Manufacturer's Field Service:

1. Coatings manufacturer shall be available to provide on-site inspections, technical assistance, and guidance for application of coating system as needed.

3.8 CLEANING

- A. At completion of day's work, remove from Site rubbish and accumulated materials.
- B. Clean paint spots and other soiling from prefinished surfaces and surfaces with integral finish. Use solvents which will not damage finished surface.
- C. Leave storage area clean and in same condition indicated for equivalent spaces in Project.

3.9 PROTECTION

- A. Protect work against damage until fully cured. Provide signs identifying wet surfaces until surfaces are adequately cured.

3.10 WASTE MANAGEMENT

A. General Requirements:

1. Place materials defined as hazardous or toxic waste in designated containers.
2. Return solvent and oil soaked rags for contaminant recovery and laundering or for proper disposal.
3. Do not dispose of paints or solvents by pouring on ground. Place in designated containers for proper disposal.
4. Where paint recycling is available, collect waste paint by type and provide for delivery to recycling or collection facility.

3.11 SCHEDULE OF COATING SYSTEMS

A. STEEL / FERROUS METALS – STRUCTURAL, TANKS, PIPE & EQUIPMENT

1. Exterior Exposed, Not Submerged / Immersed:
 - a. Zinc-Rich Urethane/Epoxy/Polyurethane System:
 - 1) Surface Preparation: SSPC-SP6/NACE 3
 - 2) Primer:
 - a) TNEMEC: Series 94-H2O Hydro-Zinc at 2.5 - 3.5 mils DFT
 - b) Sherwin-Williams: Corothane I Galvapak at 2.5 - 3.5 mils DFT
 - 3) Intermediate Coat:
 - a) TNEMEC: Series V69 Hi-Build Epoxoline II at 4.0 - 6.0 mils DFT
 - b) Sherwin-Williams: Macropoxy 646 at 4.0 - 6.0 mils DFT

- 4) Finish Coat:
 - a) TNEMEC: Series 1095 Endura-Shield at 2.0 - 3.0 mils DFT
 - b) Sherwin Williams: Acrolon 218HS at 2.0 - 4.0 mils DFT
 - 5) Total DFT:
 - a) TNEMEC: 8.5 - 12.5 mils
 - b) Sherwin Williams: 8.5 - 13.5 mils
 - b. Epoxy/Polyurethane System:
 - 1) Surface Preparation: SSPC-SP6/NACE 3
 - 2) Primer:
 - a) TNEMEC: Series V69 Hi-Build Epoxoline II at 4.0–6.0 mils DFT
 - b) Sherwin-Williams: Macropoxy 646 at 4.0 - 6.0 mils DFT
 - 3) Intermediate Coat:
 - a) TNEMEC: Series V69 Hi-Build Epoxoline II at 4.0–6.0 mils DFT
 - b) Sherwin-Williams: Macropoxy 646 at 4.0 - 6.0 mils DFT
 - 4) Finish Coat:
 - a) TNEMEC: Series 1095 Endura-Shield at 2.0–3.0 mils DFT
 - b) Sherwin Williams: Acrolon 218 HS at 2.0 - 4.0 mils DFT
 - 5) Total DFT:
 - a) TNEMEC: 8.5 - 12.5 mils
 - b) Sherwin Williams: 10.0 – 16.0 mils
- 2. Interior Exposed, Not Submerged / Immersed:
 - a. Epoxy System:
 - 1) Surface Preparation: SSPC-SP6/NACE 3
 - 2) Primer: Series
 - a) TNEMEC: V69 Hi-Build Epoxoline II at 4.0–6.0 mils DFT
 - b) Sherwin-William: Macropoxy 646 at 4.0 - 6.0 mils DFT
 - 3) Finish Coat:
 - a) TNEMECSeries V69 Hi-Build Epoxoline II at 4.0–6.0 mils DFT
 - b) Sherwin-Williams: Macropoxy 646 at 4.0 - 6.0 mils DFT
 - 4) Total DFT:
 - a) TNEMEC: 8.0 - 12.0 mils
 - b) Sherwin Williams: 8.0 - 12.0 mils
- 3. Interior or Exterior, Submerged / Immersed, Non-Potable:
 - a. Polyamine Epoxy System:
 - 1) Surface Preparation: SSPC-SP10/NACE 2
 - 2) Primer:
 - a) TNEMEC: Series V69 Hi-Build Epoxoline II at 4.0–6.0 mils DFT
 - b) Sherwin-Williams: Macropoxy 646 (B58) at 4.0 - 8.0 mils DFT
 - 3) Finish Coat:
 - a) TNEMEC: Series V69 Hi-Build Epoxoline II at 4.0–6.0 mils DFT
 - b) Sherwin Williams: Macropoxy 646 (B58) at 4.0 - 8.0 mils DFT
 - 4) Total DFT:
 - a) TNEMEC: 8.0 - 12.0 mils
 - b) Sherwin Williams: 8.0 - 16.0 mils

4. Severe Wastewater Immersion and/or H₂S Exposure:
 - a. 100% Solids Polyamine Epoxy System:
 - 1) Surface Preparation: SSPC-SP5/NACE 1
 - 2) Primer:
 - a) TNEMEC: Series G435 Perma-Glaze at 15.0 - 20.0 mils DFT
 - b) Sherwin-Williams: B67W235 Dura-Plate 235 Multi-Purpose Epoxy at 4.0 – 8.0 mils DFT
 - 3) Finish Coat:
 - a) TNEMEC: Series G435 Perma-Glaze at 15.0 - 20.0 mils DFT
 - b) Sherwin Williams: Dura-Plate 6000 at 20.0 – 30.0 mils DFT.
 - 4) Total DFT:
 - a) TNEMEC 30.0 - 40.0 mils
 - b) Sherwin-Williams: 24.0 – 38.0 mils
5. Interior or Exterior, Submerged / Immersed, Potable Water:
 - a. Polyamine Epoxy System:
 - 1) Surface Preparation: SSPC-SP10/NACE 2
 - 2) Primer:
 - a) TNEMEC: Series 94-H2O Hydro-Zinc applied at 2.5–3.5 mils DFT
 - b) Sherwin Williams: Corothane Galvapac Zinc at 2.5–3.5 mils DFT. at 3.0 - 5.0 mils DFT
 - 3) Intermediate Coat:
 - a) TNEMEC: Series 21 Epoxoline at 4.0–6.0 mils DFT
 - b) Sherwin Williams: B58W681 Sherplate 600 at 4.0 - 6.0 mils DFT
 - 4) Finish Coat:
 - a) TNEMEC: Series 21 Epoxoline at 4.0–6.0 mils DFT
 - b) Sherwin Williams: B58W681 Sherplate 600 at .0 - 6.0 mils DFT
 - 5) Total DFT:
 - a) TNEMEC: 10.5 - 15.5 mils
 - b) Sherwin Williams: 12.0 - 16.0 mils
6. Below Grade:
 - a. Epoxy/Coal Tar Epoxy System:
 - 1) Surface Preparation: SSPC-SP10/NACE 2
 - 2) Primer: Series
 - a) TNEMEC: V69 Hi-Build Epoxoline II at 4.0–6.0 mils DFT
 - b) Sherwin-Williams: Hi-Mil Sher-Tar Epoxy at 8.0 – 10.0 mils DFT
 - 3) Finish Coat:
 - a) TNEMEC: Series 46H-413 Hi Build Tneme-Tar at 16.0–20.0 mils DFT
 - b) Sherwin-Williams: Hi-Mil Sher-Tar Epoxy at 8.0 – 10.0 mils DFT
 - 4) Total DFT:
 - a) TNEMEC: 20.0 - 26.0 mils
 - b) Sherwin Williams: 16.0 - 20.0 mils

B. Maintenance Painting/Marginally Prepared Surfaces:

1. Interior or Exterior, Exposed, Not Submerged or Immersed,
 - a. Epoxy System:
 - 1) Surface Preparation: SSPC-SP2, SSPC-SP 3
 - 2) Spot Primer (Optional):
 - a) TNEMEC: Series 394-0250 at 2.5–3.5 mils DFT
 - b) Sherwin Williams: Macropoxy 646 at 4.0 - 6.0 mils DFT
 - 3) First Full Coat:
 - a) TNEMEC: Series V69 Hi-Build Epoxoline at 4.0–6.0 mils DFT
 - b) Sherwin Williams: Macropoxy 646 at 4.0 - 6.0 mils DFT
 - 4) Second Coat:
 - a) TNEMEC: Series V69 Hi-Build Epoxoline II at 4.0–6.0 mils DFT
 - b) Sherwin Williams: Macropoxy 646 at 4.0 - 6.0 mils DFT
 - 5) Third Coat (Optional):
 - a) TNEMEC: Series 1095 Endura-Shield at 2.0–3.0 mils DFT
 - b) Sherwin Williams: Acrolon 218HS at 2.0 - 4.0 mils DFT:

C. FACTORY PRIMED STEEL – DOORS, FRAMES & MISCELLANEOUS EQUIPMENT

1. Exterior Exposed:
 - a. Epoxy/Polyurethane System, Semi-Gloss Finish:
 - 1) Surface Preparation: Clean and Dry
 - 2) Primer: Factory Primed
 - 3) Intermediate Coat:
 - a) TNEMEC: Series V69 Hi-Build Epoxoline II at 4.0–6.0 mils DFT
 - b) Sherwin-Williams: Macropoxy 646 at 4.0 - 6.0 mils DFT
 - 4) Finish Coat:
 - a) TNEMEC: Series 1095 Endura-Shield at 2.0–3.0 mils DFT
 - b) Sherwin-Williams: Acrolon 218HS at 2.0 - 4.0 mils DFT
 - 5) Total DFT:
 - a) TNEMEC: 6.0 - 9.0 mils
 - b) Sherwin-Williams: 6.0 - 10.0 mils
2. Interior Exposed:
 - a. Epoxy System:
 - 1) Surface Preparation: Clean and Dry
 - 2) Primer: Factory Primed
 - 3) Intermediate Coat:
 - a) TNEMEC: Series V69 Hi-Build Epoxoline II at 4.0–6.0 mils DFT
 - b) Sherwin-Williams: Macropoxy 646 at 4.0 - 6.0 mils DFT
 - 4) Finish Coat:
 - a) TNEMEC: Series N69 Hi-Build Epoxoline II at 4.0–6.0 mils DFT
 - b) Sherwin-Williams: Macropoxy 646 at 4.0 - 6.0 mils DFT
 - 5) Total DFT:
 - a) TNEMEC: 8.0 - 12.0 mils
 - b) Sherwin-Williams: 8.0 - 12.0 mils

D. GALVANIZED STEEL & NON-FERROUS METAL PIPE & MISCELLANEOUS FABRICATION

1. Exterior Exposed:

- a. Epoxy/Polyurethane System, Semi-Gloss Finish:
 - 1) Surface Preparation: SSPC-SP16, 1.0-2.0 mil anchor profile
 - 2) Primer:
 - a) TNEMEC: Series V69 Hi-Build Epoxoline II at 3.0–5.0 mils DFT
 - b) Sherwin-Williams: Macropoxy 646 at 3.0 - 5.0 mils DFT
 - 3) Finish Coat:
 - a) TNEMEC: Series 1095 Endura-Shield at 2.0–3.0 mils DFT
 - b) Sherwin-Williams: Acrolon 218HS at 2.0 - 4.0 mils DFT
 - 4) Total DFT:
 - a) TNEMEC: 5.0 - 8.0 mils
 - b) Sherwin Williams: 5.0 - 9.0 mils

2. Interior Exposed:

- a. Epoxy System:
 - 1) Surface Preparation: SSPC-SP16, 1.0-2.0 mil anchor profile
 - 2) Primer:
 - a) TNEMEC: Series V69 Hi-Build Epoxoline II at 3.0–5.0 mils DFT
 - b) Sherwin-Williams: Macropoxy 646 at 3.0 - 5.0 mils DFT
 - 3) Finish Coat:
 - a) TNEMEC: Series V69 Hi-Build Epoxoline II at 3.0–5.0 mils DFT
 - b) Sherwin Williams: Macropoxy 646 at 3.0 – 5.0 mils DFT
 - 4) Total DFT:
 - a) TNEMEC:
 - b) Sherwin-Williams: 6.0 - 10.0 mils

E. DUCTILE OR CAST IRON – PIPE, PUMPS & VALVES

1. Exterior Exposed, OD:

- a. Epoxy/Polyurethane System, Semi-Gloss Finish:
 - 1) Surface Preparation: Per NAPF guidelines, See Article 3.4 D
 - 2) Primer:
 - a) TNEMEC: Series N69 Hi-Build Epoxoline II at 4.0–6.0 mils DFT
 - b) Sherwin Williams: Macropoxy 646 at 3.0 - 5.0 mils DFT
 - 3) Finish Coat:
 - a) TNEMEC: Series 1095 Endura-Shield at 2.0–3.0 mils DFT
 - b) Sherwin Williams: Acrolon 218HS at 2.5 - 4.0 mils DFT
 - 4) Total DFT:
 - a) TNEMEC:
 - b) Sherwin-Williams: 5.5 - 9.0 mils

2. Below Ground OD:

- a. Epoxy/Coal Tar Epoxy System:
 - 1) Surface Preparation: Solvent wipe referencing NAPF 500-03-01 followed by abrasive blasting referencing:

- a) Pipe: NAPF 500-03-04
 - b) Fittings: NAPF 500-03-05
 - 2) Primer:
 - a) TNEMEC Series V69 Hi-Build Epoxoline II at 4.0–6.0 mils DFT.
 - b) Sherwin-Williams Macropoxy 646 at 4.0 - 6.0 mils DFT
 - 3) Finish Coat:
 - a) TNEMEC: Series 46H-413 Hi Build Tneme-Tar at 14.0–20.0 mils DFT
 - b) Sherwin-Williams: Hi-Mil Sher-Tar Epoxy at 14.0 - 20.0 mils DFT
 - 4) Total DFT:
 - a) TNEMEC:
 - b) Sherwin-Williams:
3. Interior Exposed, OD:
- a. Epoxy System:
 - 1) Surface Preparation: Solvent wipe referencing NAPF 500-03-01 followed by abrasive blasting referencing:
 - a) Pipe: NAPF 500-03-04
 - b) Fittings: NAPF 500-03-05
 - 2) Primer:
 - a) TNEMEC: Series V69 Hi-Build Epoxoline II at 4.0–6.0 mils DFT
 - b) Sherwin-Williams: Macropoxy 646 at 3.0 - 5.0 mils DFT
 - 3) Finish Coat:
 - a) TNEMEC: Series V69 Hi-Build Epoxoline II at 4.0–6.0 mils DFT
 - b) Sherwin-Williams: Macropoxy 646 at 4.0 - 6.0 mils DFT
 - 4) Total DFT:
 - a) TNEMEC: 8.0 - 12.0 mils
 - b) Sherwin-Williams: 7.0 - 11.0 mils
4. Interior Exposed, Submerged and/or Immersed with H₂S Exposure, OD:
- a. Modified Polyamine Ceramic Epoxy:
 - 1) Surface Preparation: Solvent wipe referencing NAPF 500-03-01 followed by abrasive blasting referencing:
 - a) Pipe: NAPF 500-03-04
 - b) Fittings: NAPF 500-03-05
 - 2) Finish Coat:
 - a) TNEMEC: Series 431 Perma-Shield PL at 40.0 mils nominal DFT
 - b) Sherwin-Williams: Duraplate 6000 at 40.0 mils DFT
 - 3) Total DFT:
 - a) TNEMEC: 40.0 mils
 - b) Sherwin-Williams: 40.0 mils

F. PVC

- 1. Interior Exposed:
 - a. Epoxy System:
 - 1) Surface Preparation: Thoroughly Scarify with 36 Grit Sandpaper

- 2) Primer:
 - a) TNEMEC: Series V69 Hi-Build Epoxoline II at 4.0–6.0 mils DFT
 - b) Sherwin Williams: Macropoxy 646 at 3.0 - 5.0 mils DFT
- 3) Finish Coat:
 - a) TNEMEC: Series V69 Hi-Build Epoxoline II at 4.0–6.0 mils DFT
 - b) Sherwin Williams: Macropoxy 646 at 3.0 - 5.0 mils DFT
- 4) Total DFT
 - a) TNEMEC:
 - b) Sherwin-Williams: 6.0 - 10.0 mils DFT.

G. INSULATED PIPE:

- 1. Interior/Exterior Exposed:
 - a. Acrylic System, Flat Finish:
 - 1) Surface Preparation: Clean and Dry
 - 2) Primer:
 - a) TNEMEC: Series 115 Uni-Bond DF at 2.0–4.0 mils DFT
 - b) Sherwin-Williams: B51W1150 Extreme Bond Int-Ext Bonding Primer at 1.0 mils DFT.
 - 3) Finish Coat:
 - a) TNEMEC: Series 1026 Enduratone at 2.0–3.0 mils DFT
 - b) Sherwin-Williams: A74B66W661 - Pro Industrial High Performance Acrylic Eg-Shel at 1.6 mils DFT.
 - 4) Total DFT:
 - a) TNEMEC: 4.0 - 7.0 mils
 - b) Sherwin-Williams: 2.6 mils DFT

H. CONCRETE & MASONRY – PRECAST, POURED-IN-PLACE & DENSE CMU

- 1. Exterior Exposed Concrete:
 - a. Acrylic System:
 - 1) Surface Preparation:
 - a) SSPC-SP13/NACE 6, Clean and Dry
 - b) Cast-in-Place shall be cured a minimum of 14 days.
 - 2) Primer:
 - a) TNEMEC: Series 180 W.B. Tneme-Crete at 4.0–6.0 mils DFT
 - b) Sherwin-Williams: LX02W0050 Loxon Concrete & Masonry Primer-Sealer at 2.1 – 3.2 mils DFT
 - 3) Finish Coat:
 - a) TNEMEC: Series 180 W.B. Tneme-Crete at 4.0–6.0 mils DFT
 - b) Sherwin-Williams: CF13W51 Conflex Acrylic Coating at 4.0 – 6.0 mils DFT.
 - 4) Total DTF:
 - a) TNEMEC: 8.0 - 12.0 mils
 - b) Sherwin-Williams 8.0 - 16.0 mils
- 2. Below Grade Concrete, where required:
 - a. Coal Tar System:

- 1) Surface Preparation: SSPC-SP13/NACE 6, ICRI CSP 3
 - 2) Finish Coat:
 - a) TNEMEC: Series 46-465 H.B. Tnemecol at 14.0–20.0 mils DFT
 - b) Sherwin-Williams: Hi-Mil Sher-Tar Epoxy at 8.0 - 12.0 mils DFT
3. Below Grade, Submerged or Immersed Concrete:
 - a. Polyamine Epoxy System:
 - 1) Surface Preparation: SSPC-SP13/NACE 6, ICRI CSP 3
 - 2) Primer:
 - a) TNEMEC: Series V69 Hi-Build Epoxoline II at 4.0–6.0 mils DFT
 - b) Sherwin-Williams: Macropoxy 646 at 4.0 - 6.0 mils DFT
 - 3) Finish Coat:
 - a) TNEMEC: Series V69 Hi-Build Epoxoline II at 4.0–6.0 mils DFT
 - b) Sherwin-Williams: Macropoxy 646 at 4.0 - 6.0 mils DFT
 - 4) Total DFT:
 - a) TNEMEC: 8.0 - 12.0 mils
 - b) Sherwin-Williams: 8.0 - 12.0 mils
 - c) .
4. Severe Wastewater Immersion/H₂S Exposure:
 - a. 100% Solids Modified Polyamine Epoxy System:
 - 1) Surface Preparation: SSPC-SP13/NACE 6, ICRI CSP 5
 - 2) Primer/Resurfacer:
 - a) TNEMEC: Series N218 Mortarclad at 1/16–1/8" DFT
 - b) Sherwin-Williams: B58A320 Dura-Plate 2300 Waterbased Epoxy Cementitious Resurfacer
 - 3) Finish Coat:
 - a) TNEMEC: Series G435 Perma-Glaze at 30.0–40.0 mils DFT
 - b) Sherwin-Williams: B62W710 Dura-Plate 6000 Reinforced Epoxy at 30.0 – 40.0 mils DFT.
5. Interior Exposed:
 - a. Epoxy System:
 - 1) Surface Preparation: SSPC-SP13/NACE 6, ICRI CSP 2–4
 - 2) Primer:
 - a) TNEMEC Series V69 Hi-Build Epoxoline II at 4.0–6.0 mils DFT
 - b) Sherwin-Williams: Macropoxy 646 at 4.0 - 6.0 mils DFT
 - 3) Finish Coat:
 - a) TNEMEC: Series V69 Hi-Build Epoxoline II at 4.0–6.0 mils DFT
 - b) Sherwin-Williams: Macropoxy 646 at 4.0 - 6.0 mils DFT
 - 4) Total DFT:
 - a) TNEMEC: 8.0 - 12.0 mils
 - b) Sherwin-Williams: 8.0 - 12.0 mils

I. CONCRETE FLOORS

1. Light Traffic, Low Impact
 - a. Polyamine Epoxy System, Smooth, High-Gloss Finish:

- 1) Surface Preparation: SSPC-SP13/NACE 6, ICRI CSP 1–3
- 2) Primer:
 - a) TNEMEC: Series 201 Epoxoprime at 6.0–8.0 mils DFT
 - b) Sherwin-Williams: Resuprime 3579 Standard Epoxy Primer-Binder at 6.0–8.0 mils DFT
- 3) Intermediate Coat
 - a) TNEMEC: Series 281 Tneme-Glaze at 6.0–8.0 mils DFT
 - b) Sherwin-Williams: Resuflor 3746 High Performance Epoxy at 10.0 mils DFT
- 4) Finish Coat:
 - a) TNEMEC: Series 281 Tneme-Glaze at 6.0–8.0 mils DFT
 - b) Sherwin-Williams: Resuflor 3746 High Performance Epoxy at 10.0 mils DFT
- 5) Total DFT:
 - a) TNEMEC: 18.0 - 24.0 mils
 - b) Sherwin-Williams: 26.0 - 28.0 mils

J. CONCRETE SECONDARY CONTAINMENT, HORIZONTAL & VERTICAL SURFACES

1. Severe Chemical Exposure – Sodium Hypochlorite, Sodium Bisulfite:
 - a. 100% Solids, Fiber-Reinforced, Epoxy System:
 - 1) Surface Preparation: SSPC-SP13/NACE 6, ICRI CSP 3–9
 - 2) Primer:
 - a) TNEMEC: Series 201 Epoxoprime at 6.0–12.0 mils DFT
 - b) Sherwin-Williams: B58-5100 Corobond 100 Epoxy Primer-Sealer at 4.0 – 6.0 mils DFT..
 - 3) Base Coat:
 - a) TNEMEC: Series 239SC ChemBloc (Resin Kit - RCK) at 8.0 - 12.0 mils DFT
 - b) Sherwin-Williams: B62-480 DuraPlate 8200 High Temperature Epoxy at 16 – 20 mils DFT. .
 - 4) Embedded Fiberglass Mat:
 - a) TNEMEC: Series 211-0215 Secondary Containment 3/4 oz chopped strand fiberglass mat embedded into wet Series 239 mortar
 - b) Sherwin-Williams: Not Required
 - 5) Mat Saturant Coat:
 - a) TNEMEC: Series 239SC ChemBloc (Resin Kit - RCK) at 8.0–12.0 mils DFT applied wet-on-wet to completely saturate fiberglass mat
 - b) Sherwin-Williams: Not Required.
 - 6) Finish Coat:
 - a) TNEMEC: Series 282 Tneme-Glaze at 4.0–8.0 mils DFT
 - b) Sherwin-Williams: B62-480 DuraPlate 8200 High Temperature Epoxy at 16 – 20 mils DFT.
 - 7) Total DFT:
 - a) TNEMEC: 26.0 - 44.0 mils; note plus fiber mat thickness
 - b) Sherwin-Williams: 36.0 – 46.0 mils

K. CONCRETE & MASONRY – POROUS CMU & CONCRETE

1. Exterior Exposed

- a. Acrylic System, CMU Walls:
 - 1) Surface Preparation: Clean and Dry
 - 2) Primer/Filler:
 - a) TNEMEC: Series 1254 Epoxoblock WB at 60–80 sq. ft./gallon.
 - b) Sherwin-Williams: LX01W0200 Loxon Acrylic Block Surfer at 60–80 sq. ft./gallon.
 - 3) Intermediate Coat:
 - a) TNEMEC: Series 180 W.B. Tneme-Crete at 4.0–6.0 mils DFT
 - b) Sherwin-Williams: CF13W51 Conflex Acrylic Coating at 4.0 – 6.0 mils DFT.
 - 4) Finish Coat:
 - a) TNEMEC: Series 180 W.B. Tneme-Crete at 4.0–6.0 mils DFT
 - b) Sherwin-Williams: CF13W51 Conflex Acrylic Coating at 4.0 – 6.0 mils DFT.
 - 5) Total DFT:
 - a) TNEMEC
 - b) Sherwin-Williams: 12.0 - 18.0 mils
- b. Acrylic System, Smooth Concrete Walls:
 - 1) Surface Preparation: SSPC-SP13/NACE 6, ICRI CSP 2-4
 - 2) Primer/Filler:
 - a) TNEMEC: Series 130 Envirofill at 60–80 sq. ft./gallon
 - b) Sherwin-Williams: LX02W0050 Loxon Concrete & Masonry Primer-Sealer at 2.1 – 3.2 mils DFT.
 - 3) Intermediate Coat:
 - a) TNEMEC: Series 180 W.B. Tneme-Crete at 4.0–6.0 mils DFT
 - b) Sherwin-Williams: CF13W51 Conflex Acrylic Coating at 4.0 – 6.0 mils DFT.
 - 4) Finish Coat:
 - a) TNEMEC: Series 180 W.B. Tneme-Crete at 4.0–6.0 mils DFT
 - b) Sherwin-Williams: CF13W51 Conflex Acrylic Coating at 4.0 – 6.0 mils DFT.
 - 5) Total DFT:
 - a) TNEMEC:
 - b) Sherwin-Williams: 12.0 - 18.0 mils

2. Interior Exposed, Smooth Concrete

- a. Epoxy System:
 - 1) Surface Preparation: SSPC-SP13/NACE 6, ICRI CSP 2–4
 - 2) Primer/Filler:
 - a) TNEMEC: Series 1254 Epoxoblock WB at 60–80 sq. ft./gallon
 - b) Sherwin-Williams: Macropoxy 646 at 4.0 - 6.0 mils DFT.
 - 3) Intermediate:
 - a) TNEMEC: Series V69 Hi-Build Epoxoline II at 4.0–6.0 mils DFT

- b) Sherwin-Williams: Not Required.
- 4) Finish Coat:
 - a) TNEMEC: Series V69 Hi-Build Epoxoline II at 4.0–6.0 mils DFT
 - b) Sherwin-Williams: Macropoxy 646 at 4.0 - 6.0 mils DFT.
- 5) Total DFT:
 - a) TNEMEC:
 - b) Sherwin-Williams: 12.0 - 18.0 mils

L. INTERIOR GYPSUM WALLBOARD

- 1. Interior Exposed:
 - a. Waterborne System:
 - 1) Surface Preparation: Clean and Dry
 - 2) Primer:
 - a) TNEMEC: Series 151-1051 Elasto-Grip FC at 1.0–2.0 mils DFT
 - b) Sherwin Williams: Promar 200 Primer or PrepRite ProBlock Interior/Exterior Latex Primer at 1.0 - 2.0 DFT
 - 3) Finish Coat
 - a) TNEMEC: Series 1029 Enduratone at 2.0–3.0 mils DFT
 - b) Sherwin Williams: K45W2151 Pro Industrial PreCatalyzed Waterbased Epoxy - Eg-Shel at 1.5 – 1.7 mils DFT
 - 4) Finish Coat:
 - a) TNEMEC: Series 1029 Enduratone at 2.0–3.0 mils DFT
 - b) Sherwin Williams: B K45W2151 Pro Industrial PreCatalyzed Waterbased Epoxy - Eg-Shel at 1.5 – 1.7 mils DFT.
 - 5) Total DFT:
 - a) TNEMEC: 5.0 - 8.0 mils
 - b) Sherwin-Williams: 4.0 – 5.4 mils

M. WOOD

- 1. Interior Exposed:
 - a. Waterborne Acrylic Epoxy/Acrylic System, Matte Finish:
 - 1) Surface Preparation: Clean and Dry
 - 2) Primer:
 - a) TNEMEC: Series 151-1051 Elasto-Grip FC at 1.0–2.0 mils DFT
 - b) Sherwin-Williams: B51W620 PrepRite ProBlock Interior-Exterior Latex Primer Sealer at 1.4 mils DFT.
 - 3) Intermediate Coat:
 - a) TNEMEC: Series 1026 Enduratone at 2.0–3.0 mils DFT
 - b) Sherwin-Williams: K45W2151 Pro Industrial PreCatalyzed Waterbased Epoxy - Eg-Shel 1.5 – 1.7 mils DFT.
 - 4) Finish Coat:
 - a) TNEMEC: Series 1026 Enduratone at 2.0–3.0 mils DFT
 - b) Sherwin-Williams: K45W2151 Pro Industrial PreCatalyzed Waterbased Epoxy - Eg-Shel at 1.5 – 1.7 mils DFT.

- 5) Total DFT:
 a) TNE MEC: 5.0 - 8.0 mils
 b) Sherwin-Williams: 4.4 – 4.8 mils

3.12 SCHEDULE OF COLOR SYSTEM MATERIAL IDENTIFICATION

Water	Generic Color	Tnemec Color
Raw Water	olive green	110GN Clover
Settled or Clarified	aqua	10GN Aqua Sky
Finished or Potable	dark blue	11SF Safety Blue
Wastewater	Generic Color	Tnemec Color
Sewage Plant Effluent	clay	07RD Terra Cotta
Backwash Waste	light brown	68BR Twine
Reclaimed Water	light purple	16SF Rec. Water Purple
Sludge	dark brown	84BR Weathered Bark
Sewer (sanitary or other)	dark gray	34GR Deep Space
Raw Sludge	brown with black bands	15SF Safety Brown/ 35GR Black
Sludge Recirc.	brown with yellow bands	15SF Safety Brown/ 02SF Safety Yellow
Sludge Draw Off	brown with orange bands	15SF Safety Brown/ 04SF Tangerine Orange
Sludge Recirc. Discharge	brown	15SF Safety Brown
Sludge Gas	red-orange	05SF International Orange
Natural Gas	red-orange with black bands	05SF International Orange/ 35GR Black
Sulfuric Dioxide (Waste)	yellow with red bands	02SF Safety Yellow/ 06SF Safety Red
Sewage (Wastewater)	gray	33GR Gray
Chemical	Generic Color	Tnemec Color
Alum/Primary Coagulant	orange	04SF Safety Orange
Ammonia	white	11WH White
Carbon Slurry	black	35GR Black
Caustic	yellow with green band	02SF Safety Yellow/ 02SF Safety Green
Chlorine	yellow	02SF Safety Yellow
Fluoride	light blue with red band	25BL Fontainebleau/ 06SF Safety Red
Lime Slurry	light green	37GN Irish Spring

Ozone	yellow with orange band	02SF Safety Yellow/ 04SF Safety Orange
Phosphate Compounds	light green with red band	37GN Irish Spring / 06SF Safety Red
Polymers or Coagulant Aids	orange with green band	04SF Safety Orange/ 09SF Safety Green
Potassium Permanganate	violet	14SF Safety Purple
Soda Ash	light green with orange band	37GN Irish Spring / 04SF Safety Orange
Sulfuric Acid	yellow with red band	02SF Safety Yellow/ 06SF Safety Red
Sulfur Dioxide	light green with yellow bands	37GN Irish Spring/ 02SF Safety Yellow
Other		
Compressed Air	dark green	91GN Balsam
Gas	dark red	28RD Monterrey Tile
Other Lines	light gray	32GR Light Gray
Hoists/Trolleys	yellow	02SF Safety Yellow
Fire Protection	red	06SF Safety Red
Steam	orange	04SF Safety Orange

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